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Hazardous Waste Management

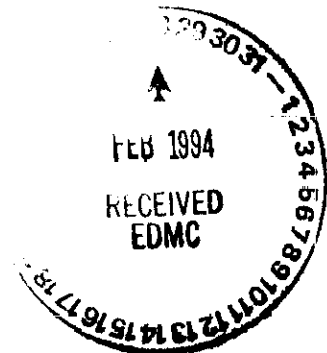
Hazardous Waste Management

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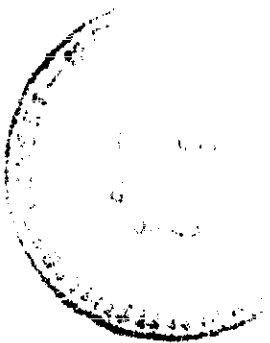
Westinghouse
Hanford Company Richland, Washington

Hanford Operations and Engineering Contractor for the
U.S. Department of Energy under Contract DE-AC06-87RL10930



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Company

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MANUAL REVISION INSTRUCTIONS

Date

Nov. 30, 1989

To: Custodian

Document No.: WHC-CM-5-16

Title: HAZARDOUS WASTE MANAGEMENT (formerly titled
Nonradioactive Dangerous Waste Packaging
and Disposal Requirements)

Revision Release No.: 1

Page 1 of 1

Section Number and Title

Remove

Insert

Page(s)

Date

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Date

PLEASE NOTE: This manual has been totally revised, and renamed. There are some new procedures as well. The manual number has been retained, in this instance, since it is referenced extensively in other manuals and procedures.

TWO ITEMS SHOULD NOT BE DISCARDED: The documentation sheet at the front (this has your copy number assigned by Document Control, and is marked "unclassified" at the top and bottom of the sheet); and the Controlled Manual Revision Record (where you record the revision number and initials when you file revisions).

PEN-AND-INK CHANGE is necessary on the documentation sheet. Change the title to: Hazardous Waste Management.

When the above is complete, remove the manual TABLE OF CONTENTS tab, as well as all pages and tabs following it, and replace with the attached material. Included:

NOTE: INTERNAL MEMO SUMMARIZING THESE MANUAL CHANGES IS FOR CUSTODIAN'S INFORMATION ONLY.

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5.0 Waste Disposal Analysis (REV 1)

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COVER/SPINE/TITLE PAGE are included in this package. Remove those currently in your manual binder, write the copy number onto the new cover and spine, and insert in the manual binder.

M. Schroeder, Manager
Management Standards

Date

12-01-89

I have personally received the revisions identified for release in this package and assume full responsibility for updating my manual in accordance with instructions.

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From: Site Hazardous Waste Engineering Support
Phone: 3-4429 R1-51
Date: November 28, 1989
Subject: EXECUTIVE SUMMARY OF CHANGES TO MANUAL WHC-CM-5-16

13841-89-092

To: WHC-CM-5-16 Manual Holders

Extensive changes to WHC-CM-5-16, Hazardous Waste Management, have been made. Four new sections have been added which address items not covered in REV. 0. Changes are summarized by section, below.

Section 1.0. The terms for generator and coordinator have been changed to Facility Generator (FG) and Engineering Support to clear up confusion that resulted from the old terms. The overview chart has been simplified.

Section 2.0. This new section discusses several things not covered in the old manual: satellite storage, temporary storage, waste rags, empty aerosol cans, recycle waste, PCB light ballasts, light bulbs, empty containers, unknown wastes, and drum handling and security. The management of light ballasts has changed significantly.

Sections 3.0, 4.0, 5.0, and 6.0. These were the old sections 2.0, 3.0, 4.0, and 5.0 and are essentially unchanged. One important change in section 5.0 revises the amount of absorbent to be used in labpacks (2:1 rather than 4:1).

Section 7.0. This new section discusses facility management.

Section 8.0. This new section describes the WHC waste minimization program.


Section 9.0. This new section clarifies the responsibilities of site personnel with respect to chemical releases.

Section 10.0. This section is essentially unchanged.

Appendices. The appendices have been updated with the latest information.

Training requirements. No new or additional training requirements are invoked by this revision.

Please contact Brewster Strobe, at 373-4429, if you have any questions regarding this revision.


Brewster Strobe
Senior Scientist, Manual Author

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Level II

Hazardous Waste Management

Solid Waste Engineering

Date Published
September 1989



Westinghouse
Hanford Company

P.O. Box 1970
Richland, Washington 99352

Hanford Operations and Engineering Contractor for the
U.S. Department of Energy under Contract DE-AC06-87RL10930

Level II Controlled Manual. The provisions of this manual apply to more than one division or department of Westinghouse Hanford Company. Requirements for review, approval, and change control are specified in WHC-CM-1-3, *Management Requirements and Procedures*, MRP 2.16, "Controlled Manual System."

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Engineering

HAZARDOUS WASTE MANAGEMENT

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Organization

TITLE:

Approved by

PREFACE

W. H. Hamilton Jr. for
H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE AND SCOPE

Hazardous wastes generated on the Hanford Site are stored or disposed for the U.S. Department of Energy-Richland Operations Office (DOE-RL) as specified in Contract DE-AC06-87RL10930.

Waste management must be performed in a safe, cost-effective, and environmentally sound manner in accordance with the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), and the U.S. Department of Transportation (DOT) regulations. This manual has been prepared in order to coordinate implementation of these regulations on a site-wide basis.

The DOE-RL established a policy to conduct its operations "in compliance with the letter and spirit of applicable environmental statutes, regulations, and standards." Consequently, all waste generators must comply with these storage and disposal requirements as well as with their own applicable safety, packaging, shipping, and security rules.

This manual outlines responsibilities for the safe handling, storage, and transportation of hazardous wastes. Instructions for the procedures to be followed for proper designation and disposal of these wastes are also provided.

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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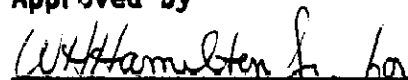
HAZARDOUS WASTE MANAGEMENT

Effective Date December 20, 1989
Organization DWM/Solid Waste
Engineering

TITLE:

Approved by

CHEMICAL WASTE DISPOSAL SYSTEM OVERVIEW


H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to provide an overview of procedures and responsibilities for handling, transporting, storing, and disposing of hazardous wastes. This information is based on the present Hanford Site organizational structure and the current state and federal regulations governing hazardous waste.

2.0 DEFINITIONS

Generator. U.S. Department of Energy-Richland Operations Office (DOE-RL).

Facility Generator (FG). The individual by facility who is responsible for the proper handling, storing, and shipping of hazardous waste.

Dangerous Waste. Ecology's term for all hazardous waste regulated in the State of Washington. The terms "Dangerous Waste" and "Hazardous Waste" are interchangeable in this manual.

"Temporary Storage" and "90-Day Storage" are synonymous terms.

3.0 RESPONSIBILITIES

3.1 FACILITY GENERATOR

The FG is the person, by facility, who is directly responsible for managing hazardous waste.

The FG and all persons handling hazardous waste must be qualified for their tasks by completing the Hazardous Waste Shippers Course (006S) and showing proficiency. This training shall be renewed on a yearly basis. See WHC-CM-5-16, Section 7.0, paragraph 5.0 for training requirements for people who handle hazardous waste.

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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CHEMICAL WASTE DISPOSAL SYSTEM OVERVIEW

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1. Supplying complete and accurate information on the Chemical Waste Disposal Request form.
2. Packaging, labeling, marking and placarding the waste according to state and Federal regulations and
3. Properly completing the Uniform Hazardous Waste Manifest for each waste shipment.
4. Arranging for inspection, radiation release, and transportation of the waste shipment.
5. Managing waste properly, including:
 - a. Incorporating waste minimization practices whenever possible. When FG signs the manifest he is certifying to this statement.
 - a. Establishing the accumulation date for each container of hazardous waste and marking the accumulation date on each waste container.
 - b. Ensuring that the waste is removed from the FG's facility within 90 days following the accumulation date and transported to the proper Hanford Site Treatment, Storage, and Disposal (TSD) facility, or shipped offsite.
 - c. Ensuring that each hazardous waste container is marked with the words, "HAZARDOUS WASTE," and bears a label describing the risks associated with the waste.
 - d. Preparing inventory lists of labpacked wastes.
 - e. Maintaining an auditable file of the original copy of the waste disposal analysis, the hazardous waste manifest for each waste shipment, inspection logs, and any other pertinent operating records.
 - f. Contacting the responsible organizations if the original copy of the hazardous waste manifest is not returned within 35 days after waste pickup by the Transporter.
 - g. Conducting weekly inspections of waste storage areas according to Washington Administrative Code (WAC) 173-303-280 and WAC 173-303-320.
 - h. Funding the cost of eventual offsite hazardous waste disposal. The FG is also responsible for the cost of transportation and onsite storage.

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3.2 ENGINEERING SUPPORT

Westinghouse Solid Waste Engineering (SWE) provides technical support for the handling of hazardous waste. Some specific responsibilities are:

1. Providing FG with correct designations, waste packaging, and shipping instructions.
2. Maintaining a central record of onsite and offsite waste shipments and dangerous waste designations.
3. Preparing the Hanford Dangerous Waste Annual Reports.
4. Supplying, on request, waste designations for the nonradioactive portion of various radioactive wastes and waste streams.
5. Distributing original copy of the signed Uniform Hazardous Waste Manifest to the FG.
6. Management of waste at the onsite TSD Facility.
7. Coordination of waste disposal with contracted offsite TSD facilities.
8. Routinely inspecting the facility, developing an inspection criteria list, and maintaining an inspection log summary, as required in WAC 173-303-320.

3.3 INSPECTOR

Transportation Logistics (Inspector) is responsible for the inspection of all shipments of nonradioactive dangerous waste as follows:

1. Inspecting each waste shipment to ensure compliance with DOT regulations. This inspection will be performed at the FG's facility prior to shipment.
2. Verifying that containers designated as empty meet the definition of empty as defined in WAC 173-303-160. The inspector may request the FG to open the containers to make this verification.
3. Insuring that radiation release or exemption has been obtained.
4. Reviewing the Uniform Hazardous Waste Manifest for completeness, legibility, accuracy and authorized shippers signature.
5. Initialing the manifest to indicate approval of the shipment for transport.

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3.4 TRANSPORTER

Westinghouse Road, Delivery, and Equipment Operations (Transporter) is responsible for transporting all onsite shipments of nonradioactive dangerous waste to disposal and storage facilities. (See Section 5.0, paragraph 2.2 for transport of Polychlorinated Biphenyl (PCB) light ballasts.)

The Transporter may establish a routine transport schedule to minimize the number of trips and associated cost required to transport wastes to storage/disposal facilities. The Transporter may arrange nonroutine transport of high priority wastes on an individual basis.

Specific Transporter responsibilities are:

1. Ensuring that shipments of all hazardous wastes are accompanied by a properly completed Uniform Hazardous Waste Manifest and documentation of unconditional radiological release.
2. Ensuring that waste containers are properly loaded, segregated by hazard class, and secured for safe transport.
3. Ensuring that shipments of dangerous waste are not stored (enroute) for more than 10 calendar days.
4. Ensuring that the entire quantity of dangerous waste is delivered to the receiving facility.
5. Signing the Uniform Hazardous Waste Manifest and obtaining the Receiving Facility Operator's signature on the manifest.
6. Securing correct placarding to waste transport vehicles. The Transporter must also remove the placards after the waste is unloaded from the vehicle.
7. Maintaining a file of the "Transporter" copy of the hazardous waste manifests. Copies should be removed only after they are signed by the Receiving Facility Operator.

3.5 OPERATOR

The Receiving Facility Operator (Operator) is the qualified person assigned to operate a permitted waste facility. The Operator must be trained according to WAC 173-303, and has the following responsibilities:

1. Signing and dating the Uniform Hazardous Waste Manifest to certify that the waste shipment was received exactly as described on the manifest or with exceptions as noted in the discrepancy section of the manifest.

2. Denying receipt of a waste shipment if the shipment fails to comply with applicable packaging and labeling requirements, fails to meet facility requirements, or has no radiation release or exemption.

3. Handling shipment discrepancies as follows:

a. Documenting significant discrepancies on each page of the manifest.

b. Promptly notify the FG and SWE of the shipment discrepancy.

c. Attempting to resolve the discrepancy with the FG and/or the Transporter within 15 days after receipt of the waste.

NOTE: Discrepancies are differences between the quantity and/or type of dangerous waste designated on the manifest, and what is actually received by the facility. Quantity differences are variations in piece count. Type variations are obvious physical or chemical differences which can be discovered by inspection (e.g., liquids substituted for solids).

4. Taking appropriate actions as described in the Facility Contingency Plan if an unacceptable waste shipment cannot leave the facility due to identified public health and/or environment hazards.

5. Maintaining complete and auditable facility records, including:

a. The "TSD" copy of the Uniform Hazardous Waste Manifest.

b. The location and quantity of each hazardous waste within the facility and cross-references to specific manifest document numbers.

c. A file of reports and details of all incidents requiring implementation of the Facility Contingency Plan.

d. A file of the facility personnel training records.

6. Routinely inspecting the facility list, and maintaining an inspection log summary, as required in WAC 173-303-320.

4.0 PROCEDURES

The steps for disposing of hazardous wastes are presented in order:

1. Waste Identification: Fully identify each waste and its container by filling out a Chemical Waste Disposal Request Form. See Section 3.0 of this manual for preparation instructions.

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2. Waste Designation: Designate each waste as Dangerous Waste, Extremely Hazardous Waste, PCB, or Nonregulated waste.
3. Waste Disposal Analysis: Perform an analysis of regulatory packaging and shipping requirements for each specific waste. Identify correct shipping destination for each waste.
 - a. Specify packaging requirements for each waste in accordance with regulations.
 - b. Specify labeling requirements for each waste in accordance with regulations.
4. Waste Transportation: Obtain documented approval and transport for a waste shipment.
 - a. Arrange for inspection to approve compliance with packaging and labeling requirements.
 - b. Obtain radiological release for each waste container.
 - c. Arrange transportation.

5.0 DOCUMENTATION

The following documentation is required to dispose of hazardous waste:

1. Chemical Waste Disposal Request (Section 3.0).
2. Waste Designation Form (Section 4.0).
3. Disposal Analysis (Section 5.0).
4. Unconditional Radiological Release Survey or Exemption from Radiation Protection Survey (Section 6.0 and Appendix D).
5. Uniform Hazardous Waste Manifest (Section 6.0).

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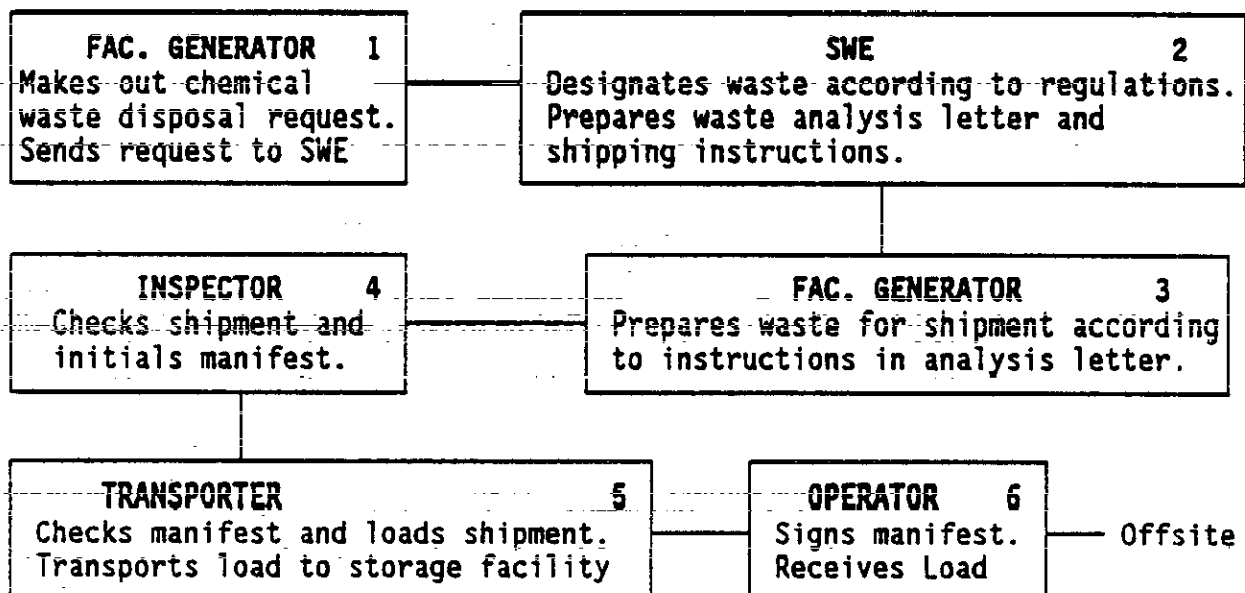
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Figure 1. Flow Chart of Waste Disposal.

RESPONSIBILITIES UNDER CM-5-16

5-16 SECTION	FAC. GENERATOR	SWE	INSPECTOR	TRANSPORTER	OPERATOR
1.0 OVERVIEW	X	X	X	X	X
2.0 HANDLING WASTE	X	X			X
3.0 DISPOSAL REQUEST	X	X			
4.0 WASTE DESIGNATION	X	X			
5.0 DISPOSAL ANALYSIS	X	X			
6.0 WASTE TRANSPORT	X	X	X	X	X
7.0 FACILITY MANAGEMENT	X				X
8.0 WASTE MINIMIZATION	X	X	X	X	X
9.0 RELEASES	X	X			
10.0 ANNUAL REPORTS	X	X			X

Each section of this manual contains detailed information on handling hazardous waste. The "X" indicates which sections contain instructions for each job responsibility.



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Organization

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Engineering

HAZARDOUS WASTE MANAGEMENT

TITLE:

Approved by

WASTE HANDLING AND STORAGE

W. H. Hamilton Jr. for
H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to help the Facility Generator decide what waste must be handled by the Chemical Waste Disposal System. It also instructs the FG on handling of wastes in satellite and temporary storage areas, marking of wastes, and special waste storage problems.

2.0 WASTES SUBJECT TO THE CHEMICAL WASTE DISPOSAL SYSTEM

Any material is a "Solid Waste" once it is: discarded, abandoned, inherently waste-like, or not exempted by regulations. The term "Solid Waste" includes solids, liquids, and contained gasses. Because there are over 50,000 substances described as hazardous materials, it is not easy to decide how to dispose of them properly. (See WHC-CM-5-16, Hazardous Waste Management, Section 4.0, "Waste Designation," for details.)

Everyday wastes such as leather, wood, cloth, paper, plastic, aluminum, and most ferrous metals are not subject to regulation and may be discarded into a proper trash receptacle. Of course, this never applies to radioactive materials.

Waste that has both a radioactive hazard and a chemical hazard is called Mixed Waste (MW) and must have the chemical portion of the hazard designated according to state and federal regulations. All regulations for packaging and disposal of the chemical portion must be met when disposing of MW.

Everyday waste, if there is reason to suspect that it has been contaminated by chemicals, must be characterized and a disposal request submitted to Solid Waste Engineering (SWE). All chemical waste whether from a process, a spill, or off the shelf products must be submitted to SWE for designation. If there is uncertainty as to whether it is safe to simply throw waste away:

CONSULT WITH SWE

3.0 STORAGE AREAS

There are different kinds of storage areas on site and they are regulated differently for different wastes and condition.

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WASTE HANDLING AND STORAGE

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3.1 SATELLITE STORAGE

A satellite area is a location "at or near the point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste." Satellite storage areas must be managed to comply with WAC 173-303-200. (See Section 7.0, "General Facility Management," paragraph 2.1 for facility management of satellite areas.)

Rules for waste and containers in satellite areas include:

1. A satellite area may only contain 55 gallons of dangerous waste or 1 quart of acutely hazardous waste per waste stream. Appendix B contains the list of acutely hazardous waste.
2. When the 55-gallon or 1-quart limit is reached an accumulation date must be marked on the container and it must be moved to 90-day storage or the 616 Nonradioactive Dangerous Waste Storage Facility (616 Facility) WITHIN 72 HOURS.
3. Containers must be in good condition. Leaking or damaged containers must be overpacked, or contents transferred to a new container.
4. Containers must be clearly marked "Hazardous Waste" and be labeled to identify major hazards. Labels must be easily readable.
5. Containers must be made of or lined with materials which are compatible and will not react with the waste.
6. Containers must be closed, except when waste is being added or removed.
7. Containers must be handled and stored in a manner which will not damage the container.
8. Incompatible wastes shall not be placed in the same container.
9. A container inventory logsheet must be maintained.

3.2 TEMPORARY STORAGE (90-DAY STORAGE)

Management of wastes in temporary waste storage areas (90-day storage) is similar to satellite areas, with some exceptions. The requirements for protection from rain contamination and accidents are greater. (See Section 7.0, "General Facility Management," paragraph 2.2 for details of the site requirements for and facility management of 90-day storage areas.)

Rules for temporary storage:

1. A temporary accumulation area may be used for the accumulation of any quantity of dangerous waste or of acutely hazardous waste for up to 90 days.

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2. Each container must be clearly marked "Hazardous Waste."
3. Each container must be labeled to identify the major hazards.
4. The accumulation date is the date that waste is first placed in the container. (See Section 3.0, "Chemical Waste Disposal Request Form," paragraph 2.3 for details of how to determine the accumulation date.)
5. The accumulation date must be marked on each container.
6. A container inventory must be maintained.

4.0 SPECIAL CASE WASTES

Some wastes on the Hanford Site require special directions for handling. The following directions will aid in disposing of these wastes. Not all special cases will be covered in this section. Whenever there are questions about handling an unusual waste consult with SWE for guidance.

4.1 WASTE RAGS

Although waste rags, shop towels, wipe cloths, etc. may appear to be "practically clean," or the solvent may appear to have evaporated, these rags may still be regulated. The following rules apply:

1. Rags that have been contaminated with chemicals designated as Dangerous Waste (DW) or Extremely Hazardous Waste (EHW) may also be as DW or EHW. Designations are required.
2. When rags that are used to clean up a spill of hazardous waste or to wipe solvents from equipment the rags must be managed as hazardous waste until designated as non-regulated.
3. Store waste rags in accordance with the waste characteristic of the contaminant, e.g., rags with corrosive waste will be stored as corrosive; flammable wastes will be stored as flammable, etc..
4. Do not mix hazardous waste rags with nonregulated rags.
5. Do not mix DW rags with EHW rags.
6. Have the chemicals predesignated to avoid costly analysis later.
7. Do not air dry rags to get rid of a hazardous waste contaminant.
8. Oily rags that have not come in contact with a hazardous waste may be disposed of as trash unless the oil itself is contaminated with a regulated substance or has a flash point $\leq 140^{\circ}\text{F}$.

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WASTE HANDLING AND STORAGE

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4.2 AEROSOL CANS

Aerosol cans of commercially available "household" products are normally not regulated when empty and may be disposed of as trash. However, some aerosol cans may be regulated as dangerous waste.

Employees must take empty aerosol cans and other containers to the Facility Generator rather than throwing them into the trash. The FG will consult SWE to determine if a product or empty container is regulated.

Cans that have lost propellant but still contain material (shake the can) will probably be regulated. Spraying of the cans into the air, or puncturing cans, for the sole purpose of emptying them is not allowed.

Whenever possible, purchase cans with CO₂ or nitrogen propellant or "pump" cans. Labels and Material Safety Data Sheet (MSDS) are sources of information as to whether cans contain a hazardous waste.

4.3 WASTE FOR RECYCLE

Waste for recycle or reclamation, if it is being accumulated in a satellite storage area, must be labeled, handled, and stored just as any other hazardous material. The 55-gallon limit for satellite storage applies.

4.3.1 Silver for Recycle

Generators with silver wastes from photographic process, should establish a "routine" disposal in order to move it quickly and easily. See Section 5.0, "Waste Disposal Analysis," paragraph 5.0 for details of "routine" disposal requests.

4.3.2 Lead and Batteries for Recycle

Westinghouse Hanford Company, Excess, Surplus Sales and Shipping (ESSS), 1167-A Building, 1100 Area accepts lead scraps and batteries (lead acid only). Absolutely no NI-Cd, mercury, or glass type batteries will be accepted. Contact ESSS for guidelines on packaging, transportation, and acceptance criteria.

4.4 POLYCHLORINATED BIPHENYLS

Storage and handling of polychlorinated biphenyls (PCB) wastes are governed by the Toxic Substances Control Acts (TSCA) (Reference 40 CFR 761). Refer to WHC-CM-7-5, Environmental Compliance Manual for additional rules on handling and storing PCB wastes. The following rules must be followed by the FG at his facility:

1. Satellite storage for PCB waste ≥ 50 ppm is prohibited.
2. Maximum temporary storage for PCBs is 30 days.

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3. Liquid wastes with PCB concentration of ≥ 500 ppm must be transported directly to the 212-P PCB facility. There is no temporary storage.
4. The PCB waste below 50 ppm that is not from ballasts or capacitors and that is contaminated with a regulated waste will be treated like a Washington State dangerous waste.
5. The PCB waste contaminated with Resource Conservation and Recovery Act (RCRA) or Ecology regulated wastes will be stored at the 616 Facility. (See Section 5.0, "Waste Disposal Analysis," paragraph 2.2.)
6. The PCB ballasts and capacitors will be taken to area collection barrels for later pickup and disposal.

4.5 FLUORESCENT LIGHT BALLASTS

This section applies to fluorescent light ballasts (or small capacitors) taken out-of-service. Items for collection are PCB containing ballasts. All unmarked ballasts must be assumed to contain PCBs.

NOTE: The "PCB" ballasts must be collected and stored separately from "PCB-free" ballasts. The PCB ballasts are regulated by TSCA 30-day temporary storage requirements. The disposal of PCB-free ballasts is determined by WAC 173-303 regulations.

Instructions for Routine Ballast Collection:

1. Each facility should establish one or more satellite areas for storage of "PCB-free" ballasts. For PCB containing ballasts OSS/Site Services will maintain temporary 30-day storage in each area. A list of "drum custodians" will be established for each 30-day storage area and maintained by OSS/Site Services.
2. Out-of-service ballasts which are leaking must be double plastic bagged. Once wrapped in plastic, each package should be labeled to indicate contents: either PCB or PCB-free. Non-leaking ballasts do not have to be plastic bagged.
3. If the ballast contains PCBs, call OSS/Site Services for location of 30-day storage area. Take ballast to designated area. Drum custodian at 30-day storage in each area must keep a drum inventory log.
4. For purposes of keeping the log, each PCB light ballast shall be considered to contain 1 pound (.454 Kg) of PCBs.
5. If the ballast is PCB-free, place a EPA Hazardous Waste sticker on waste drum containing non-PCB items and store in facility's satellite storage area or RCRA 90-day storage area. A separate log must be maintained for PCB-free ballast and placed on the storage containers.

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6. PCB ballasts will be collected from 30-day ballast storage areas as necessary but always within 28 days. The FG at the 30-day storage area must be notified of the scheduled pick up time.

NOTE: The FG is responsible for obtaining the necessary radiological release documentation. The Transporter will not accept any shipment which does not have a 24-hour unconditional release.

7. Electrical Utilities Group within Operations Site Services will contact Solid Waste Engineering for a hazardous waste manifest number to record all facility pick ups of PCB ballasts. Pick ups will be noted on the manifest by AREA, such as "300," "400." The Generator will be listed as: U.S. Department of Energy-Richland Operations Office, rather than by individual FG.
8. The FG's log will be used to verify drum contents by transport staff at the time of pickup. Drum contents will be taken from facility drums and placed in drums on the transport vehicle or empty drums exchanged for full. Electrical Utilities will keep a copy of the inventory log on file. (It is recommended that the FG also keep a copy of the inventory log for facility records.)

NOTE: PCB Ballasts (30-day TSCA waste) will be transported to the 212-P, PCB Storage Facility, 200 North Area.

9. A copy of the hazardous waste manifest will be kept on file by Electrical Utilities with copies forwarded to Solid Waste Engineering.
10. For information regarding ballast storage and collection, contact Electrical Utilities for the 30-day storage area representative near your facility.
11. For more information on PCBs refer to WHC-CM-7-5, Environmental Compliance Manual, Part Y, "Asbestos and Polychlorinated Biphenyls."

4.6 LIGHT BULBS

Ordinary incandescent light bulbs are not hazardous wastes and may be discarded to trash. However other types of bulbs may be hazardous and special handling is required. Unbroken bulbs may be taken to satellite collection areas in buildings other than the one where they originated as long as the bulb is unbroken and the hazardous ingredient is contained.

In general, bulbs are collected by workers who have the responsibility for replacing bad bulbs. The bulbs are then carried to a central location in each area and stored until 55 gallons of waste is collected. Then they are disposed of according to WAC 173-303 regulations.

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4.6.1 Sodium Bulbs

Sodium bulbs may be crushed into a drum containing water. This will be done according to a state approved procedure. Where no procedure exists bulbs will be disposed of without water reaction treatment. Accidentally broken sodium bulbs will be treated as a spill incident.

4.6.2 Mercury Bulbs

Mercury bulbs are crushed into U. S. Department of Transportation (DOT) specification drums. When 55 gallons of bulbs are accumulated they are disposed of as a dangerous waste. Crushing is done according to procedure. Accidentally broken mercury bulbs will be handled as a spill incident.

4.6.3 Fluorescent Bulbs

Fluorescent light bulbs are crushed into DOT specification drums according to procedure. When 55 gallons of crushed bulbs are collected the bulbs are handled as a dangerous waste. Both mercury and fluorescent bulbs may be crushed into the same container. Accidentally broken bulbs will be treated as a spill incident.

4.7 EMPTY CONTAINERS

A container is empty when it contains no more than 1% of its capacity if it can hold under 110 gallons, or no more than 0.3% of its capacity if it holds more than 110 gallons. A container which held compressed gas is EMPTY when the pressure inside the container equals or nearly equals atmospheric pressure. Empty containers fall into three categories: DOT regulated, Ecology regulated and nonregulated. (See Section 4.0, "Waste Designation," paragraph 4.0 for explanation of how empty containers are designated.)

4.7.1 Emptying the Container

An important part of managing containers is to empty them in such a way that they meet the regulatory definition of "empty" (see 4.7 above).

NOTE: PREFERABLY DRUMS SHOULD BE COMPLETELY EMPTY WITH NO FREE LIQUID.

Whenever possible, place liquid containing drums horizontally on racks, then tip them up to drain the last contents. Drums that are pumped must be tipped up to remove the last material. Once empty, close the container so that rainwater cannot enter.

Some empty containers are regulated by Ecology even when empty. Regulated empty containers are those which previously contained acutely hazardous waste, and empty pesticide containers which bear a danger or warning label.

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Triple rinsing is the only method for rendering these containers nonregulated. Triple rinsing is accomplished by rinsing the container in a minimum of 10% of its volume and repeating the process three times. The rinsate from triple-rinsing will be a dangerous waste requiring disposal.

4.7.2 Measuring the Residue

To determine if a container is "empty" measure the depth of fluid in the drum: The drum must be on a level surface. Insert a rod that is compatible with the waste vertically into the drum. Remove the rod and measure the wetted part.

The meniscus of particularly viscous substances or liquids with a high "wetting" capability should be taken into account to avoid false readings. False readings can also be obtained if the measuring rod is not inserted vertically, if the drum has a bulged or dented bottom, or if the measuring rod is inserted carelessly, causing splashing.

The depth of residue must not exceed one percent (1%) of the inside height of the container. For a DOT specification 55 gallon steel drum this is 0.33 inch. For a 30-gallon drum the 1% measurement is 0.28 inch. The 1% depth of other containers can be determined as needed.

4.7.3 Reuse of Containers/Mixing of Residues

Empty containers of non-triple-rinsed "acutely hazardous" waste, or empty pesticide containers should NEVER be used to accumulate Dangerous Waste (DW). The residue in the empty container, when mixed with the new waste, will cause all of the new waste to be designated EHW rather than DW. This is contrary to site efforts to reduce the amount of EHW generated.

Dangerous waste may be accumulated in non-Ecology-regulated empty containers, as long as (1) the container residue is compatible with the newly added waste, (2) the container is acceptable packaging according to the DOT, and (3) the residue in the container will not cause the newly added waste to be designated EHW rather than DW.

4.8 UNKNOWN WASTES

Wastes of unknown or partially known composition must be sampled and analyzed. Sampling will be done according to the requirements of WAC 173-303-110, i.e., Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, SW-846 as revised and updated, and American Society for Testing Materials standard methods as listed in the WAC 173-303.

Assistance in sampling can be obtained from SWE. The Hanford Environmental Health Foundation (HEHF) normally provides analytical services for characterization of wastes. In some cases samples will be shipped offsite at the generators expense.

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5.0 WASTE SECURITY

The purpose of container security is to insure, as much as practical, that the contents of the waste container are not changed, either by accident or design, after sampling has been done or waste disposal requests have been submitted. The purpose of proper handling of containers is to prevent the spilling of hazardous waste.

5.1 RESPONSIBILITY

It is the responsibility of all employees to handle hazardous waste in a safe manner. Responsibility for waste container security and protection of containers of hazardous wastes belongs to the FG.

5.2 DRUM HANDLING

Inspect all containers for damage; dents, bulges, bad seams, and poor or missing bungs. Be sure container material is compatible with waste to be placed inside.

In order to prevent bulging and leaking drums, allow a minimum of three inches of head space. **DO NOT OVERFILL!!**

Liquids should be stored in bung type drums whenever possible. Bungs and seals must not leak when the drum is tipped for loading.

Handle drums carefully so that no damage occurs from fork lifts or dropping. Proper drum handling equipment should be utilized.

5.3 DRUM SECURITY

Whenever practical, hazardous waste storage areas should be locked. At present no simple method has been developed to secure individual drums of waste.

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HAZARDOUS WASTE MANAGEMENT

Organization

DWM/Solid Waste
Engineering

TITLE:

Approved by

CHEMICAL WASTE DISPOSAL REQUEST FORM


 H. F. Daugherty, Manager
 Defense Waste Management

1.0 PURPOSE

In order to determine the legally acceptable disposal method and packaging for dangerous wastes, detailed information must be known concerning the composition of the waste material and the nature of its container. To provide this information, the Facility Generator (FG) must submit a Chemical Waste Disposal Request (Figure 1) to Solid Waste Engineering (SWE). This disposal request will be analyzed and the information will be used to:

1. Make a waste designation in accordance with regulations.
2. Determine the correct waste shipping destination.
3. Provide instructions for waste packaging and shipping.
4. Document data required by offsite waste disposal contractors.
5. Provide data for the annual waste generation reports.

2.0 PROCEDURE (CHEMICAL WASTE DISPOSAL REQUEST FORM)

This section gives the FG step-by-step instructions for completing the Chemical Waste Disposal Request.

THE DISPOSAL REQUEST MUST BE FILLED OUT AND SUBMITTED TO SWE AS SOON AS POSSIBLE AFTER THE ACCUMULATION DATE IS ESTABLISHED.

2.1 FACILITY GENERATOR LOGBOOK NUMBER

The FG may assign a unique optional log number to be used for tracking and record keeping purposes. This number will be cross-referenced to the Uniform Hazardous Waste Manifest number that is assigned to each waste shipment.

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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2.2 REQUESTED BY

The FG will provide prime contact name, telephone number, and the company or organization name in the proper blocks and sign and date the form.

2.3 ACCUMULATION DATE

The FG must indicate the accumulation date for the oldest waste in the disposal request.

The Accumulation Date is:

1. The day a waste is first generated, or
2. The day a quantity of dangerous waste being accumulated in containers in a satellite storage area equals 55 gallons of dangerous waste or 1 quart of acutely hazardous waste.
3. For wastes with unknown hazards, sampling and analysis must be done. Write the sampling date on the container. The FG assigns the accumulation date when either chemical analysis or notification by SWE indicate the waste is hazardous.
4. If hazards of one or more of the waste constituents are known or suspected, an accumulation date must be assigned immediately.
5. For unused or old laboratory chemicals, the accumulation date is the day the decision is made to dispose of the material. The accumulation date for empty containers of acutely hazardous waste is the day the container is emptied.
6. Empty containers of waste designated as DW or as non-acutely hazardous EHW are not regulated and do not need to be marked with an accumulation date.

2.4 MANIFEST NUMBER

A unique Uniform Hazardous Waste Manifest number is assigned to each disposal request for tracking purposes. The SWE will assign this number and complete the block.

2.5 COLUMN A, ITEM NUMBER

The FG will enter an "item number" for wastes of the same chemical composition which are stored in the same type of containers. This number will be cross-referenced on the disposal analysis documentation.

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2.6 COLUMN B, NUMBER OF CONTAINERS

The number of containers for each unique waste.

2.7 COLUMN C, CONTAINER DESCRIPTION

The volume capacity of each container specified in Column B is entered; e.g., 55 gallons, 5 gallons, pint, etc.

Container information should include the type and material (e.g., glass bottles, steel drums, plastic drums, fiberboard drums, cardboard boxes, etc.) and the condition of the container (i.e., "damaged" containers will often need overpacking). The DOT specification numbers should be entered when the waste is contained in a DOT specification container, such as a 17E or 17H drum. Specification numbers are usually stamped on the bottom of the drums.

Other useful container information could be:

1. Identifying drums as to bung or open-head type.
2. Identifying drums that are designated as "single-trip" or "nonreusable," which are not reusable for "second-trip" packaging.

2.8 COLUMN D, KILOGRAMS OF WASTE

The total weight of the waste specified in column A must be entered in Kilograms. Units of volume are not acceptable.

To convert to Kilograms use the following formulas:

Pounds X .454 = Kilograms

Pounds divided by 2.20 = Kilograms

Gallons X 3.785 X Density = Kilograms

The weight of residues remaining in empty containers must also be estimated (see WHC-CM-5-16, Section 4.0, "Waste Designation," paragraph 4.0 for the definition of "EMPTY").

NOTE: Containers, inner liners, and weight of absorbents are not considered part of the waste when computing total waste quantity.

2.9 COLUMN E, WASTE DESCRIPTION

The FG must provide the trade name(s) (if available) and a general description of each unique waste.

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2.10 COLUMN F, CHEMICAL COMPONENTS

The FG must enter all specific constituents in each waste. Wastes can be categorized without expensive testing only if all of the chemical constituents are known. This means that the weight percent of all waste constituents must total 100 %. This includes water and inert ingredients. All available information describing the waste composition (Material Safety Data Sheet (MSDS), lab analysis, etc.) must be attached to the disposal request.

1. Commercial Chemicals. Information about the chemical makeup of wastes can be found in specification sheets, on labels, and especially on MSDSs. The MSDS can be obtained from HEHF.

NOTE: Ecology regards some chemicals to be dangerous even though they are not listed by the Environmental Protection Agency (EPA) or the Occupational Safety and Health Act (OSHA).

2. Laboratory Reagents. Leftover laboratory reagents can frequently be identified by ingredients listed on the label. If the label lists impurities, such as lead or arsenic, or other heavy metals, include these on the waste disposal request.
3. Waste Mixtures (SLOP JARS). A log of the amount of spent chemicals combined in SLOP containers must be maintained, so that the FG can calculate the weight percent of each constituent. Only compatible, spent liquid chemicals should be combined.
4. Used Oil and Grease. Oils should be identified by type and manufacturer, where possible. Most used oils must be tested for polychlorinated biphenyls (PCB) content, flash point, HOCs, Cd, Cr, As, and Pb. Analytical services are available through HEHF. An "Oil and Hazardous Waste Analysis Form," available from HEHF, must accompany each sample.

If used oil is generated on a regular basis SWE may utilize "process knowledge" and not need to have every batch analyzed. When there are several drums of oil from the same source only one drum need be analyzed.

Unknown used oil must be analyzed for total halogens, metals, PCBs and flashpoint. If the oil has been exposed to a hazardous material it must be analyzed to prove the suspected contaminant does not exceed regulatory limits.

A table summarizing the limits used in designating used oil can be found in Section 4.0, "Waste Designation," paragraph 5.0.

Grease must be analyzed for heavy metals if contaminants are suspected.

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5. Absorbents. If wastes are mixed with absorbent, the weight of the waste and estimated weight of absorbent should be indicated separately. The type of absorbent used must also be noted on the disposal request.
6. Unknowns. Wastes of unknown or partially known composition must be sampled and analyzed according to Ecology-approved procedures. Analyses must be completed according to methods approved by Ecology and the EPA.

2.11 COLUMN G, WEIGHT PERCENT

The FG must enter the wt% of each chemical in the waste. Trace amounts of pesticides, herbicides, heavy metals, and PCBs must be specified. Metals of particular importance are arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver. Components must add up to 100 wt%, or greater, including water, earth or other constituents. If weights are only available in ranges (e.g., Methanol 10% to 20%), list the ranges. **DISPOSAL REQUESTS THAT DO NOT CONTAIN WEIGHT % MAY BE RETURNED TO THE FG.**

2.12 COLUMN H, PHYSICAL PROPERTIES

The phases of the waste must be known (i.e., solid, liquid, gas, sludge, multilayered, etc.) in order to determine the proper designation.

The FG must enter the appropriate abbreviation from the list below.
(more than one may be necessary):

Solid	S
Liquid	L
Gas	G

1. Show the pH of the waste. Most organic liquids will be nearly neutral.
2. Indicate the flashpoint of the waste. Indicate the flashpoint in degrees Fahrenheit and whether it is "Open Cup" or "Closed Cup." List the boiling point of flammable liquids. The main categories of flammable and combustible liquids are:

Combustible Liquid
Class 1A Flammable Liquid
Class 1B Flammable Liquid
Flammable Liquid
Ignitable Liquid

See Appendix A for the definitions of these categories.

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3. Density. Information on density may be obtained from the manufacturer, MSDS, chemical resource books, or essential material specifications.

2.13 COLUMN I, HAZARDS

The FG should enter any known information concerning hazards that pertain to each waste. This information may be obtained from manufacturer's labels or literature, manufacturer's MSDS, etc. The appropriate abbreviations to describe waste hazards must be selected from the list below (more than one may be necessary):

Corrosive	C
Ignitable	I
Reactive	R
Toxic	T
Explosive	E
Persistent	P
EP Toxic	EP
Carcinogenic	X

2.14 COLUMN J, WASTE STATUS

The Generator must enter the appropriate abbreviations from the list below (more than one may be necessary):

Reacted	Rx
Treated	T
Used	U
Old (or expired)	O (any unused material to be discarded)
Spill Material	S

2.15 COLUMN K, CONTAINER STATUS

The Generator must enter the appropriate abbreviations from the list below:

Full	F
Part Full	PF
Empty	MT (as defined in Appendix A)
Triple Rinsed	TR (as defined in Appendix A)

Please note that many of these containers are still regulated by DOT, which requires that they be transported as if they were full.

Insufficient information provided by the FG will cause the Chemical Waste Disposal Request to be refused and returned to the FG. This delay may impact the FG's ability to meet the legal obligation to transfer nonradioactive dangerous waste to the Transporter within the statutory 90-day period.

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HAZARDOUS WASTE MANAGEMENT

Effective Date December 20, 1989

Organization

DWM/Solid Waste
Engineering

TITLE:

Approved by

WASTE DESIGNATION

W.H. Hamilton
H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to provide guidance for designating hazardous wastes in accordance with WAC 173-303. Use the Waste Designation Worksheet (Figure 1) when making waste designations.

In many cases the MSDS does not supply enough information to make a designation. SWE personnel should call manufacturers directly to obtain complete information or request this service from HEHF.

2.0 CATEGORIES

To be designated as a dangerous waste, a material must first meet the definition of "solid waste." A solid waste is any discarded material that is abandoned, considered inherently waste-like, or recycled. This includes solids, liquids and containerized gasses. An "abandoned" material is one which is intended for disposal; or which is being accumulated, stored or treated prior to disposal. Inherently waste-like materials are specifically identified by state regulations as wastes derived from the production or manufacture of materials containing polyhalogenated aromatic hydrocarbons such as pentachlorophenol. A recycled waste, however, is only defined as a solid waste when it is:

1. Used in a manner constituting disposal
2. Burned for energy recovery
3. Reclaimed
4. Accumulated speculatively.

Ecology considers any wastes resulting from dangerous waste recycling processes to be dangerous unless proven otherwise.

NOTE: Most recycling of dangerous waste will be performed by offsite contractors. Onsite waste volume reduction processes include recovery of silver from spent photographic solutions, ethylene glycol recovery, and solvent recovery. Manifesting of wastes sent to these processes, and inclusion in the dangerous waste annual report may be required.

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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If a waste conforms to one of these criteria, it may be regulated as a dangerous waste. (See the definitions in WAC 173-303-016, Table 1.)

Once waste has been identified as conforming to the definition of a solid waste, the waste must also be identified as to its conformance to the definition of a dangerous waste. In the State of Washington, dangerous wastes include hazardous liquids, solids, gases, or sludges. The state regulations encompass more wastes than are defined as "hazardous" by the USEPA. A chemical not regulated by the Environmental Protection Agency (EPA) may be a Washington State Dangerous Waste. Dangerous wastes shall be identified in accordance with the criteria established in WAC 173-303-016.

"Dangerous Waste" is the generic name used by the state of Washington for all hazardous wastes. The terms "Hazardous Waste" and "Dangerous Waste" are interchangeable in this manual. Dangerous Waste actually has two separate categories: DW (Dangerous Waste) and EHW (Extremely Hazardous Waste). These categories are based on severity of hazard and are defined as follows:

"DW"--The category DW is the category of lower hazard and specifically applies to wastes designated as DW according to the regulations. All wastes designated DW must be shipped offsite for disposal.

"EHW"--The category EHW is the category of severe hazard and applies to wastes designated as EHW according to the regulations. Onsite land disposal of wastes designated as EHW or DW is prohibited.

3.0 GENERAL PROCEDURE

The general process of waste designation is defined in WAC 173-303-070. This procedure is outlined below for wastes of known composition. Waste must be checked against the following sections, in the order listed below, until the waste is designated:

1. Section 3.1, Discarded Chemical Products (WAC 173-303-081)
2. Section 3.2, Dangerous Waste Sources (WAC 173-303-082)
3. Section 3.3, Infectious Dangerous Waste (WAC 173-303-083)
4. Section 3.4, Dangerous Waste Mixtures (WAC 173-303-084)
5. Section 3.5, Dangerous Waste Characteristics (WAC 173-303-090)

Once the waste is designated, no other designations are required except when the Generator has "knowledge" that the waste has additional designations. In this case, the additional designations must be recorded. At the Hanford Site, waste is checked against all of the five elements listed above to provide complete characterization.

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WASTE DESIGNATION

Under certain circumstances, Ecology may require waste generators to test dangerous waste against criteria given in WAC 173-303-101, -102 and -103. These criteria are nearly identical to the criteria described in WAC 173-303-084 (Section 3.4), except that sections WAC 173-303-101, -102 and -103 include steps for biological and chemical testing. Ordinarily, a generator will not have advanced "knowledge" about the results of such tests, if they have not been required.

3.1 DISCARDED CHEMICAL PRODUCTS

Section WAC 173-303-081 requires the Generator to determine whether the waste is a "Discarded Chemical Product." Discarded Chemical Products are defined in WAC 173-303-081 as those chemical products or intermediates which are listed on the Discarded Chemical Products Lists of WAC 173-303-9903. These two lists (approximately 640 total entries) are "Acutely Dangerous Chemical Products" and "Moderately Dangerous Chemical Products." Appendix B contains both lists, combined in a single list and arranged in alphabetical order for easy use.

1. "Acutely Dangerous Chemical Products" are designated EHW.
2. "Moderately Dangerous Chemical Products" are designated DW.

NOTE: See Appendix A. The terms "Acutely Dangerous" and "Acutely Hazardous" do not share the same definition.

"Discarded Chemical Products" include:

1. Original "unused" products as received from the manufacturer which contain a listed product as the sole active ingredient. (Trace additives and water are not considered additional active ingredients.)
2. Any of these products which are of off-specification composition.
3. Any container or inner liner which has been used to hold any of these products or off-specification products if the chemical is an acutely hazardous waste.
4. Any residue or contaminated soil, water or other debris resulting from the cleanup of a spill of any listed product or off-specification product.

Each of the listed chemicals has a dangerous waste number assigned by RCRA. These numbers are located on the Discarded Chemical Products List.

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3.2 DANGEROUS WASTE SOURCES

Section WAC 173-303-082 requires the FG to determine if the waste is designated by the Dangerous Waste Sources lists. Dangerous waste sources are process wastes, or spent solvents or solutions.

Dangerous Waste Sources include:

1. Wastes listed in the WAC 173-303-9904 Tables.
2. Any mixture of a "Dangerous Waste Source" with another waste.
3. Any container or inner liner which previously held acutely hazardous waste.

The WAC 173-303-9904 contains two lists of Dangerous Waste Sources. "Non-Specific Sources" and "Specific Sources," which describe either wastes with certain chemical components and/or wastes from specific unit operations.

If a waste contains one or more of the chemical components in a given source entry, or is produced by a listed process, then it is designated as a Dangerous Waste Source. Appendix C contains the Dangerous Waste Sources list. Dangerous Waste Sources are assigned the dangerous waste numbers given in the list. In general, dangerous waste sources are designated DW. In some cases, however, footnotes in the lists describe special circumstances where these wastes are designated EHW.

3.3 INFECTIOUS DANGEROUS WASTES

There are currently no regulations for this category (see WAC 173-303-083).

3.4 DANGEROUS WASTE MIXTURES

Section WAC 173-303-084 requires the Generator to determine if the waste is Toxic, Persistent, or Carcinogenic. This section applies to pure chemicals as well as waste mixtures. Please note that additional waste codes are not required for listed Discarded Chemical Products, if the appropriate reason for designation has been identified in Appendix B. Prior to making a dangerous waste mixture determination, the wt% of each hazardous constituent must be known. A "reasonable" effort must be made to determine hazardous constituents. Generally this means looking at sources such as the RTECS, SAX manual, the MERC Index, MSDS and other common references.

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3.4.1 Toxicity

In order to determine whether the waste is DW, EHW, or not regulated due to toxicity, "Toxic Categories" must be assigned to the constituents and an "Equivalent Concentration" (EC) calculated. The EC is then compared to Figure 2, the Toxic Dangerous Waste Mixtures Graph (WAC 173-303-9906) in order to assign the waste a Toxic status.

Toxic categories of X, A, B, C, or D (listed in their order of severity) may be determined directly from the EPA, Table 302.4, "List of Hazardous Substances and Reportable Quantities" (EPA Spill Table), which is located in Section 302.4 of 40 CFR 302. If the constituent is not listed on the EPA Spill Table, the Toxic Category must be determined from toxicity data.

To determine the Toxic Category from toxicity data, each constituent must be checked against the Ecology Toxic Categories Table (Table 1). Toxicity data must be obtained from the "Registry of Toxic Effects of Chemical Substances" (RTECS), published by the National Institute for Occupational Safety and Health, or from any other readily available source, such as manufacturer's information (check the references in WHC-CM-5-16, Section 1.0, "Chemical Waste Disposal System Overview," paragraph 6.0).

Four toxicity criteria are given in Table 1: oral, aquatic, inhalation, and dermal. Be aware that these four criteria are not the only published toxicity parameters. Care must be taken to assure that the source's data are applicable to Ecology criteria.

If data are available for more than one of the acceptable criteria, the value of severest toxicity must be used so that the constituent is assigned the most severe toxic category. If toxicity data are not available from the EPA Spill Table, RTECS, or other reasonable source, then no Toxic Category is assigned to that constituent.

Once toxic categories are established for all constituents, the EC is calculated from the following formula:

$$(EC\%) = \text{Sum wt\% X} + \frac{\text{Sum wt\% A}}{10} + \frac{\text{Sum wt\% B}}{100} + \frac{\text{Sum wt\% C}}{1,000} + \frac{\text{Sum wt\% D}}{10,000}$$

Each summation (sum wt%) is the sum of all the weight percents of constituents in a particular toxic category.

For example, a waste of 10% Category A material, 5% Category B material, 15% Category D material, and 70% waste (non-toxic) would have the following EC:

$$EC = 10\%/10 + 5\%/100 + 15\%/10,000 = 1.0515$$

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The EC is compared to Figure 2. The category of EHW, DW, or "Nonregulated" is assigned to the waste by plotting the point of intersection of the EC, and the total waste mixture quantity. Waste mixtures must be evaluated as follows:

Equivalent Concentration (%)

Less than 0.001

0.001 to 0.01

Greater than 0.01

Designation

Not regulated

DW

DW or EHW depending on quantity

Toxic waste which are designated EHW are assigned the dangerous waste number WT01. Toxic wastes which are designated DW are assigned the dangerous waste number WT02.

3.4.2 Persistence

If the waste contains halogenated hydrocarbons (HH), or polycyclic aromatic hydrocarbons (PAH), it must be evaluated for persistence.

Halogenated Hydrocarbons are organic compounds composed of carbon, hydrogen, and any one or more of the halogens: fluorine, chlorine, bromine, or iodine. Halogenated hydrocarbons may also contain other elements.

To evaluate HH, sum the weight percents of all of the HH in the waste mixture. The sum is the "Total HH Concentration."

The category of DW, EHW, or undesignated is assigned to the waste by plotting the point of intersection of the total HH concentration and the total monthly or batch waste mixture quantity of Figure 3, Persistent Dangerous Waste Mixtures Graph (WAC 173-303-9907). This means that HH wastes are regulated as follows:

Wt% HH

Less than 0.01

0.01 to 1.0

Greater than 1.0

Designation

Not Regulated

DW

EHW

EHW HH waste mixtures are assigned the dangerous waste number WP01; DW HH waste mixtures are assigned the dangerous waste number WP02. For example, a mixture containing 10 wt% propylene chlorohydrin and 90% water is EHW, WP01.

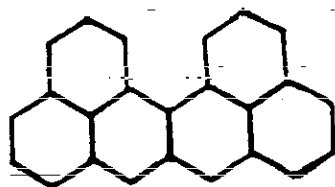
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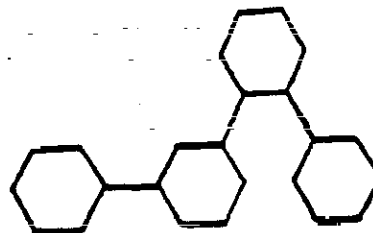
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Polycyclic Aromatic Hydrocarbons are hydrocarbon molecules composed of two or more fused benzene ring structures. Conjugated ("daisy-chain") ring structures are not regulated structures. Only molecules containing four, five, and six fused rings are regulated.



FUSED



CONJUGATED

To evaluate PAH, sum the weight percents of all of the four-, five-, and six-ring PAH in the waste mixture. The sum is the "Total PAH Concentration."

The category of EHW or undesignated is assigned to the waste by plotting the point of intersection of the total PAH concentration and the total Hanford monthly or batch waste mixture quantity (greater than 4,000 pounds) on Figure 3. Specifically, waste with PAH concentration greater than 1.0 wt% are EHW.

The PAH wastes falling into the EHW category are given the dangerous waste number WPO3. For example, a mixture of 5 wt% pyrene and 95% acetone is EHW, WPO3. The PAH wastes less than 1% are not regulated for persistence.

3.4.3 Carcinogens

The third element of the Dangerous Waste Mixtures section involves checking the waste for carcinogens.

Each constituent of the waste mixture must be checked to determine whether it is a human or animal positive or a suspected carcinogen. This information is published by the International Agency for Research on Cancer (IARC) and is available in the RTECS. It is often convenient to acquire carcinogen data in the RTECS at the same time that toxicity data are collected for a given chemical.

Waste mixtures are designated as carcinogens as follows:

1. When the concentration of any one IARC positive carcinogen (human or animal) exceeds 1.0 wt% of the waste mixture, the mixture is designated EHW and given the dangerous waste number WCO1.

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2. When the concentration of any one IARC positive carcinogen (human or animal) exceeds 0.01 wt% of the waste mixture, (but is less than 1.0 wt%), the mixture is designated DW and given the dangerous waste number WC02.
3. When the total concentration summed for all IARC positive and suspected carcinogens (human or animal) exceeds 1.0 wt% of the waste mixture, the mixture is designated DW and given the dangerous waste number WC02.

Ecology does not regulate some IARC carcinogenic wastes as carcinogens. Those wastes are labeled carcinogenic solely because of tests involving implantation of the substance into test animals. Examples are polypropylene and polystyrene. This information is available in the IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans. Some respiratory carcinogens, such as asbestos, are exempt from the dangerous waste regulations as long as they are managed in compliance or in an equivalent manner to the requirements or of 40 CFR Part 61.

3.5 DANGEROUS WASTE CHARACTERISTICS

Section WAC 173-303-090 requires waste to be checked for characteristics of ignitability, corrosivity, reactivity, and EP toxicity.

If the waste has not been designated DW or EHW prior to this section, samples may be required to determine characteristics. The Ecology-approved sampling methods are given in WAC 173-303-110. Instructions for checking wastes for the dangerous waste characteristics are listed below.

3.5.1 Ignitability

A waste is ignitable if it has any of the following properties:

1. Liquid (other than an aqueous solution containing less than 24% alcohol by volume) with a flashpoint less than 60°C (140°F) according to published or experimental closed cup test data.
2. Solid or sludge, under standard conditions of temperature and pressure, capable of causing fire through friction, absorption of moisture or spontaneous chemical changes, and when ignited, burns so vigorously and persistently that it creates a hazard.
3. Ignitable compressed gas as defined in 49 CFR 173-300.
4. Oxidizer as defined in 49 CFR 173-151. Oxidizers generally include solid nitrates and nitrites.

NOTE: Wastes determined to be ignitable are assigned the dangerous waste number D001. These wastes are DW.

3.5.2 Corrosivity

A waste is Corrosive if it has any of the following properties:

1. Aqueous with a pH less than or equal to 2 (≤ 2), or a pH greater than or equal to 12.5 (≥ 12.5) according to accepted Ecology test methods.
2. Liquid which corrodes SAE 1020 steel faster than 0.250 inch (6.35 mm) per year at a temperature of 130°F (55°C). Rate is determined by an Ecology-approved method.
3. Solid or Semi-Solid which has an aqueous phase pH less than or equal to 2, or pH greater than or equal to 12.5 when it is made into a 50 wt% mixture with water. Ecology provides approved test methods.
4. It causes severe damage upon contact with skin.

Wastes determined to be Corrosive are assigned the dangerous waste number D002. These wastes are DW.

3.5.3 Reactivity

A waste is Reactive if it has any of the following properties:

1. It is normally unstable and readily undergoes violent change without detonating.
2. It reacts violently with water.
3. It forms potentially explosive mixtures with water.
4. When mixed with water, it generates toxic gasses, vapors or fumes in amounts sufficient to present a danger to human health or the environment.
5. It is a cyanide (-CN) or sulfide (-S) bearing waste which, when exposed to pH conditions between 2 and 12.5, can generate toxic gasses, vapors or fumes in amounts sufficient to present a danger to human health or the environment.
6. It is capable of detonation or explosive reaction if subjected to a strong initiating source or heated under confinement.
7. It is readily capable of detonation or explosive decomposition, or reaction at standard temperature and pressure.

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8. It is a DOT Forbidden Explosive, a Class A or Class B Explosive as defined in 49 CFR 173.51, 173.53 and 173.88. Examples are:

Nitrolycerin, liquid:
(not desensitized)

Forbidden Explosive

Black powder (gunpowder):

Class A Explosive

Exhibition display fireworks:

Class B Explosive

Wastes determined to be Reactive are assigned the dangerous waste number 0003. These wastes are DW.

3.5.4 EP Toxicity

The characteristic of EP Toxicity relates to the amount of 14 specific chemicals which could leach from the solid or liquid waste. These chemicals include heavy metals like lead, chromium, etc., and certain pesticides and herbicides. Wastes may be DW or EHW depending on the concentration of these chemicals.

The Extraction Procedure Toxicity Test (EP TOX) is an extraction procedure to test the solubility of hazardous components in a buffered aqueous solution. In a "worst case" calculation, a solid waste may be assumed to dissolve completely in the buffered extractant, which is always 20 times the mass of the waste sample. For liquids, concentration limits are imposed directly on the waste.

The EP Toxicity List for Liquid and Soluble Solid Waste (Table 2) contains limiting EHW and DW concentrations for liquids, and for solids which would cause the extract to be designated if all of the hazardous component were to leach out or dissolve. The alternative to using this table is to perform the EP Toxicity Test on solid wastes. Appropriate dangerous waste numbers are listed in the table.

4.0 DESIGNATING EMPTY CONTAINERS

Empty containers fall into three categories: DOT regulated, Ecology regulated and nonregulated. (See Section 2.0, paragraph 4.7.2 for management of empty containers.) Certain empty containers, which previously held dangerous waste, are not regulated by Ecology. These containers are those which previously contained wastes that are not acutely hazardous, and which are not pesticide containers bearing a danger or warning label. "Acutely Hazardous" wastes are defined in WAC 173-303-040(2) and Appendix A of this manual, and specifically identified in Appendices B and C. Designate empty containers as indicated below.

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4.1 DOT REGULATED CONTAINERS

The DOT regulated containers are those which required a DOT hazard label when they were full. Even when empty they must have a DOT hazard label and a proper shipping name, e.g., sodium hydroxide liquid, UN1824. These drums must have a unique number when manifested.

4.2 ECOLOGY REGULATED CONTAINERS

The Ecology regulated containers are those which contained an "acutely hazardous" substance when they were full, and/or pesticide containers that bear a danger or warning label. They must have an EPA Hazardous Waste sticker on them, have a unique number when manifested, and be shipped exactly as if they were full.

4.3 NONREGULATED EMPTY CONTAINERS

An empty container is not regulated if:

1. It contained a DOT regulated material and has been rinsed and cleaned. These containers must be labeled "Non-regulated, MT, cleaned". All hazard or warning labels must be removed or obliterated.
2. It contained a acutely hazardous waste and has been triple rinsed. These containers must not have a EPA Hazardous Waste sticker and must be labeled "Non-regulated, MT, triple rinsed. All hazard or warning labels must be removed or obliterated.
3. It contained materials that were not regulated by DOT or Ecology when full. These containers must be labeled "Non-regulated, MT."

5.0 DESIGNATING USED OIL

Table 3 summarizes the parameters which govern the designation of used oil. (See Section 3.0, paragraph 2.10.4) for information required from FGs.)

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Figure 1. Waste Designation Worksheet.

WASTE DESIGNATION WORKSHEET

Disposal Request # _____ Date _____ Designator _____

Material _____

Solid _____ Liquid _____ Gas _____ Density _____ pH _____ Flash Point _____

Kg of Waste _____ Status _____ Container(s) _____

Chemical Composition

% TOX E.C. Ref.

Toxic? WAC 171-303-101

E.C. _____ bs _____

EHW WT01 Consult

DW WT02 Graph

No EC < .001%, No Data

RQ (Kg)

References: SAX, MERC,
RTECS, 40CFR, Chem Dic.Discarded Chem. Product ☐ Yes ☐ No Des. _____ Land Ban: _____

WAC 173-303-081

Dangerous Waste Source? ☐ Yes ☐ No Des. _____ Land Ban: _____

WAC 173-303-082

PERSISTENT? ☐ Yes ☐ No ☐ EHW WPO1 (HH >1%) Land Ban: _____

WAC 173-303-102

☐ DW WPO2 (HH >.01%)☐ EHW WPO3 (PAH >1%)CARCINOGEN? ☐ Yes ☐ No ☐ EHW WCO1 (positive >1%) (suff)

WAC 173-303-103

(IARC onTy)

☐ DW WCO2 (positive >.01%)

(susp. >1%) (Ltd)

IGNITABLE? ☐ Yes ☐ No ☐ DW D001 (flashpoint <140 f)

WAC 173-303-090,5

☐ Flammable (fp <100 F) ☐ Combustible (fp 100-200F) ☐ OxidizerCORROSIVE? ☐ Yes ☐ No ☐ DW D002 (pH ≤2 or ≥12.5)

WAC 173-303-090,6

Land Ban: _____

REACTIVE? ☐ Yes ☐ No ☐ DW D003

WAC 173-303-090,7

EP TOXIC? ☐ Yes ☐ No Designation _____

WAC 173-303-090,8

Land Ban: _____

WASTE CLASS: _____

WASTE NUMBERS: _____

DOT Proper Shipping Name: _____

Hazard Class: _____

DOT ID #: _____

Labels: _____

Package reference: _____

NOTES: _____

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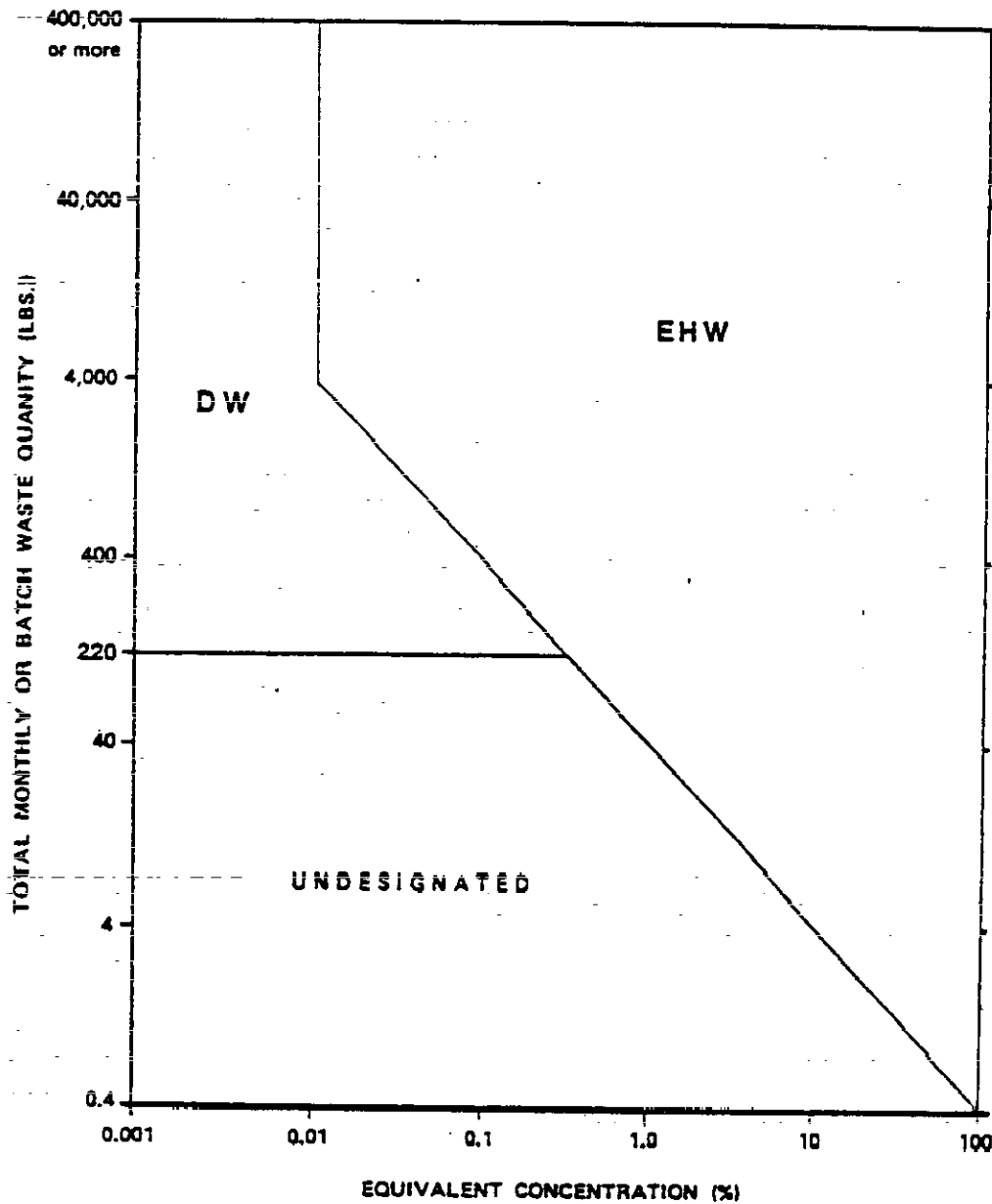
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Figure 2. Toxic Dangerous Waste Mixtures Graph.

WAC 173-303-9906 TOXIC DANGEROUS
WASTE MIXTURES GRAPH.

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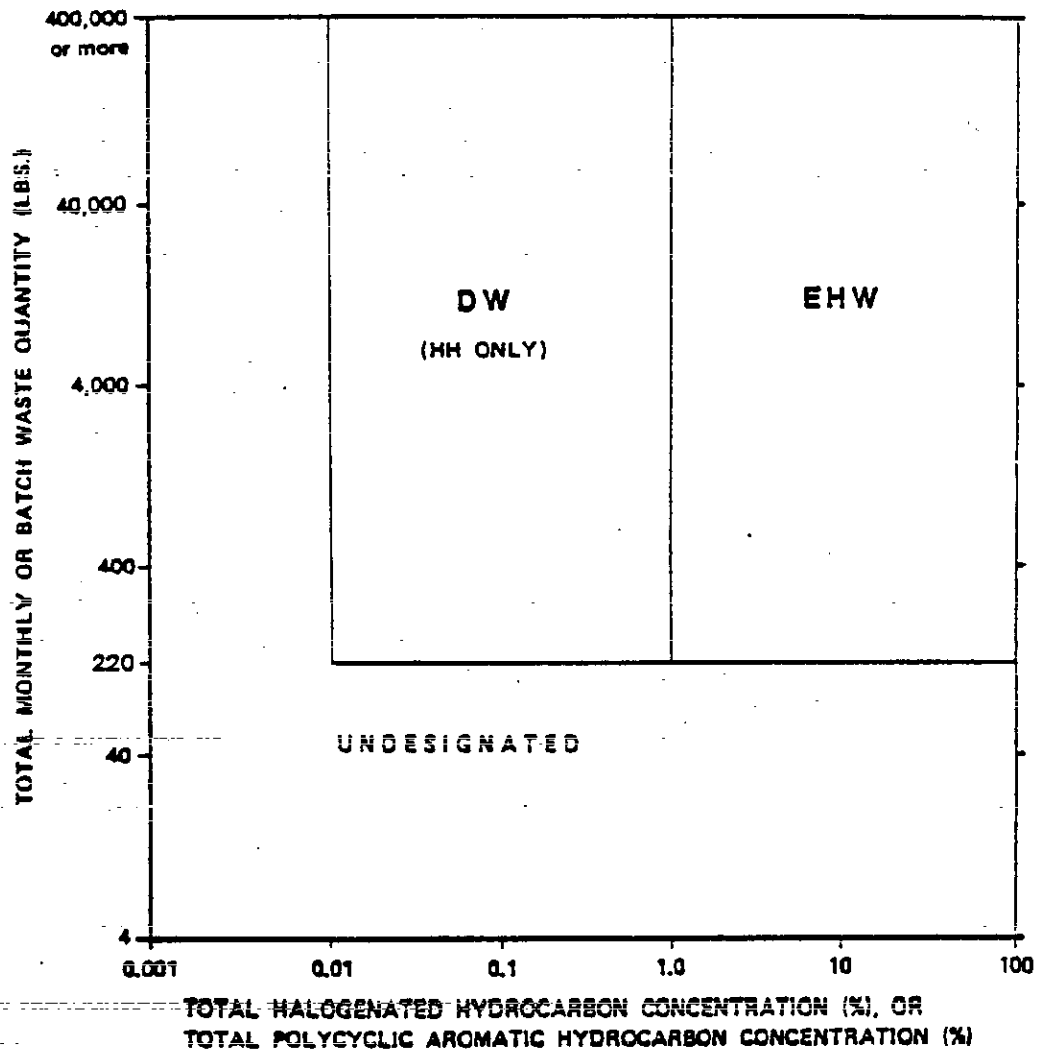
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Figure 3. Persistent Dangerous Waste Mixtures Graph.

WAC 173-303-9907 PERSISTENT DANGEROUS
WASTE MIXTURES GRAPH.

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Table 1. Ecology Toxic Categories.

Category	TL _{m96} (FISH) OR AQUATIC (FISH) LC ₅₀ (ppm)	ORAL (RAT) LD ₅₀ (mg/kg)	INHALATION (RAT)* LC ₅₀ (mg/l)	DERMAL (RABBIT) LD ₅₀ (mg/kg)
X	<0.1	<0.5	<0.02	<2
A	0.1 - 1	0.5 - 5	0.02 - 0.2	2 - 20
B	1 - 10	5 - 50	0.2 - 2	20 - 200
C	10 - 100	50 - 500	2 - 20	200 - 2,000
D	100 - 1,000	500 - 5,000	20 - 200	2,000 - 20,000

* Defined as mg/l of air over a period of four (4) hours.

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Table 2. EP Toxicity List for Liquid and Soluble Solid Wastes

HAZARDOUS WASTE NUMBER	CONTAMINANT	LIQUID WASTE EHW CONCENTRATIONS (mg/l of Waste)	LIQUID WASTE DW CONCENTRATIONS (mg/l of Waste)	SOLID WASTE EHW CONCENTRATIONS (wt% of Solid)	SOLID WASTE DW CONCENTRATIONS (wt% of Solid)
0004	Arsenic	>500	5 - 500	>1	0.01 - 1
0005	Barium	>10,000	100 - 10,000	>20	0.2 - 20
0006	Cadmium	>100	1 - 100	>0.2	0.002 - 0.2
0007	Chromium	>500	5 - 500	>1	0.01 - 1
0008	Lead	>500	5 - 500	>1	0.01 - 1
0009	Mercury	>20	0.2 - 20	>0.04	0.0004 - 0.04
0010	Selenium	>100	1 - 100	>0.2	0.002 - 0.2
0011	Silver	>500	5 - 500	>1	0.01 - 1
0012	Endrin	>2	0.02 - 2	>0.004	0.00004 - 0.004
0013	Lindane	>40	0.4 - 40	>0.08	0.0008 - 0.08
0014	Methoxychlor	>1,000	10 - 1,000	>2	0.02 - 2
0015	Toxaphen	>50	0.5 - 50	>0.10	0.001 - 0.1
0016	2,4-D	>1,000	10 - 1,000	>2	0.02 - 2
0017	2,4,5-TP Silvex	>100	1 - 100	>0.2	0.002 - 0.2

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Table 3. Determining Designation of Used Oils.

CHART FOR DETERMINING DESIGNATION OF USED OILS

	SPECIFICATION USED OIL	OFF-SPECIFICATION USED OIL	HAZARDOUS WASTE
Metals * arsenic cadmium chromium lead	not to exceed: 5 ppm 2 ppm 10 ppm 100 ppm	sum must not exceed 100 ppm	sum >100 ppm
Ignitability	140° F or greater	140° F or greater	<140° F
Total halogens	<1,000 ppm	<1,000 ppm	1,000 ppm or greater
PCB's	<2 ppm	<2 ppm	2 ppm or greater

* EP TOX analysis for additional heavy metals must be performed if they
their presence is suspected.

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HAZARDOUS WASTE MANAGEMENT

Effective Date December 20, 1989
Organization DWM/Solid Waste
Engineering

TITLE:

Approved by

WASTE DISPOSAL ANALYSIS


H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to provide guidance for compiling the waste disposal analysis documentation:

1. Proper selection of a waste storage/disposal facility.
2. Proper identification of shipping requirements.
3. Proper preparation of all waste disposal analysis documentation.
4. Proper packaging, labeling, and marking of each waste container.

2.0 WASTE FACILITIES ACCEPTANCE CRITERIA

This section outlines the types of waste that are acceptable in Hanford Site "Permitted" chemical waste facilities.

NOTE: Chemical Waste Storage and Disposal Facilities are required to refuse shipments of improperly packaged or manifested wastes. The Facility Generator (FG) will pay all additional transport costs for items which are returned, and costs for items which must be repacked at the storage facility. The FGs may be required to perform the repacking at the storage facility prior to acceptance.

2.1 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY

The following wastes will be accepted in the 616 Nonradioactive Dangerous Waste Storage Facility, 616 Building, 600 Area:

1. EHW: Liquids, absorbed liquids, solids, and empty containers which previously contained acutely hazardous waste.
2. DW: Liquids, absorbed liquids, and solids.

Certain waste will not be accepted at the 616 Facility:

1. U.S. Department of Transportation (DOT) forbidden explosive materials;

*This is a complete rewrite; therefore, no revision bars are used to indicate changes

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2. Shock sensitive or explosive peroxide-forming chemicals.

Class 4 oxidizers will not be stored in excess of a 10-pound total amount.

2.2 POLYCHLORINATED BIPHENYL STORAGE FACILITY

The 212-P PCB Storage Facility, 212-P Building, 200 North Area, accepts two types of nonradioactive PCB waste.

1. Waste items containing PCB concentration of 50 ppm or greater, including transformers, capacitors, or other PCB-contaminated waste.
2. Transformer or capacitor-related waste containing less than 50 ppm and greater than 2 ppm PCB.

NOTE: The 212-P Facility staff must be notified one (1) week in advance of shipments to this facility to ensure that the building is open to receive waste. Please call the 212-P Facility operator to arrange for waste receipt.

These PCB wastes must be transported to the 212-P Facility within 30 days of the accumulation date.

NOTE: Polychlorinated biphenyl waste that is contaminated with other dangerous waste will be stored at the 616 Facility.

Liquid wastes containing PCB concentrations of 500 ppm or greater must be transported to the 212-P Facility upon generation of the waste. For 30 day temporary storage of PCB waste of <500 to 50 ppm concentration there must be an approved spill Prevention Control and Countermeasures (SPCC) plan and the waste must be stored indoors with secondary containment provided in accordance with TSCA requirements.

The PCB wastes are governed by the TSCA, with the EPA functioning as the Administrator. The regulations are found in the 40 CFR 761, Parts 700-END. The FG should contact SHWES if assistance is needed in the disposal of PCB wastes.

The following waste information must be known for acceptance at the 212-P Facility:

1. PCB concentration (ppm) in the waste. Methods of analysis must comply with regulations, and analytical results must be documented.
2. Flashpoint. May be obtained from testing or manufacturer's data.
3. Chemical composition of the waste.

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Most polychlorinated biphenyls (PCB) wastes are excluded from Ecology regulation (see Appendix C of this manual and WAC 173-303-071(3)(k)) except for instances of release or spill, or the potential for either, that could present an environmental hazard (WAC 173-303-050).

2.3 CENTRAL LANDFILL STORAGE/DISPOSAL FACILITY

Trash Trench. The Central Landfill Trash Trench will not accept hazardous waste under any circumstances. Only properly prepared, nonhazardous, nonregulated wastes will be landfilled in the Trash Trench. Disposal of nonhazardous/ nonregulated chemicals must be authorized by SWE. Proper documentation authorizing the waste disposal must accompany each waste shipment. Waste destined for the Trash Trench must meet the following requirements.

1. Receive approval for disposal from SWE.
2. All containers will be transported by Transportation's nonregulated container delivery vehicle on the routine pick up day.
3. All containers must be inspected by the Landfill Operator.

Nonregulated Drum Storage Area. The Central Landfill Nonregulated Drum Storage Area is a staging location for drums destined for recycling via a drum reclamation or metal salvage firm. To be accepted at this area, a drum must meet these criteria:

1. The drum must be empty. Refer to WHC-CM-5-16, Section 2.0, "Waste Handling and Storage," paragraph 4.7 for details on determining when a drum is empty.
2. If the drum contained acutely hazardous waste, it must have been triple rinsed (see Section 2.0, paragraph 4.7).
3. If the drum contained a DOT regulated material, it must be marked and labeled to reflect the former contents in accordance with DOT regulations.
4. Drum must be in good condition with no holes, punctures, large dents, and/or excessive corrosion that would compromise its structural integrity.
5. Drum must have bung or other closures in place.
6. Drum must be inspected for compliance with WHC-CM-5-16.
7. Drum must be accompanied by the proper disposal analysis documentation.
8. Drum must be manifested to the storage area.

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3.0 REGULATORY SHIPPING REQUIREMENTS

NOTE: This section is not intended to be a replacement for the DOT regulations but is for information only.

The Environmental Protection Agency (EPA) and Ecology require nonradioactive dangerous wastes to be shipped in accordance with DOT 49 CFR Parts 100 to 199, "Transportation." Specific elements of packaging, labeling, and transporting dangerous waste are contained in 49 CFR Parts 171 through 179.

3.1 PROPER SHIPPING NAME

The use of proper shipping names for all nonradioactive dangerous waste is required by 49 CFR 172. The Hazardous Materials Table (49 CFR 172.101) is a listing of hazardous materials by their proper DOT shipping name. The "List of Hazardous Substances and Reportable Quantities" (Appendix to 49 CFR 172.101) contains Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) designated hazardous substances. Only names listed on the Hazardous Materials Table may be used as proper DOT shipping names. If a waste is not specifically listed, the appropriate "generic" shipping name must be chosen, eg: "flammable liquid, N.O.S." Instructions for assigning proper shipping names are given in 49 CFR 172, Subpart B. The following items are of importance when determining a proper shipping name:

1. If the waste is a mixture or solution, the words "MIXTURE" or "SOLUTION" should be added to the proper shipping name (49 CFR 172.101).
2. If regulated by EPA, the proper shipping name must be preceded by or include the word "WASTE," e.g., "Hazardous WASTE, liquid, n.o.s.," "WASTE Methyl Acetone" (49 CFR 172.101).
3. The generic proper shipping name (Hazardous Substance, solid, n.o.s.; Hazardous Waste, liquid, n.o.s.) must include, in parenthesis, the constituent(s) that qualify the waste (49 CFR 172.324). This information must appear on all shipping papers and be clearly marked on the waste shipping container.
4. The proper shipping name must be preceded by the notation "RQ" if a hazardous substance (49 CFR 172.101, Appendix) is present inside a single container, e.g., "RQ, Waste Flammable Liquid, n.o.s." If the proper shipping name does not include the hazardous substance's name, then the name of the substance or the hazardous waste codes (D, F, and K codes only) in parenthesis must follow the shipping name.

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3.2 HAZARD CLASS

The Hazardous Materials Table is used to assign a hazard class to each material according to its proper shipping name. Hazard classes are defined in 49 CFR 173. Wastes may have more than one hazard; however, the hazard class that will be associated with the proper shipping name must be the first actual hazard class encountered in the following priority list:

1. Poison A
2. Flammable Gas
3. Non-Flammable Gas
4. Flammable Liquid
5. Oxidizer
6. Flammable Solid
7. Corrosive Material (liquid)
8. Poison B
9. Corrosive Material (solid)
10. Irritating Materials
11. Combustible Liquid (in containers over 110 gallons)
12. ORM-B*
13. ORM-A*
14. Combustible Liquid (in containers less than or equal to 110 gallons)
15. ORM-E*

*ORM = Other Regulated Material

3.3 IDENTIFICATION NUMBER

When the proper shipping name and the appropriate hazard class have been identified, the related Identification Number can be located in the Hazardous Materials Table.

3.4 PACKAGING

The Hazardous Materials Table references the DOT regulations for specific packaging of hazardous materials.

Empty containers must be transported in the same manner as when they contained a greater quantity of hazardous material. Some DOT specification drums are marked nonreusable containers (NRC) or single-trip containers (STC). Notable examples are 17H drums and 17E drums frequently used at Hanford. These drums may be reused one time for transporting dangerous waste after they have been emptied of the manufacturer's original contents.

Certain conditions must be met when reusing these containers:

1. Waste must be packaged and transported according to 49 CFR 171-179.
2. The container must be authorized for the material being shipped, and must be in good condition.

3. Transportation must be by highway only.
4. The package must not be shipped sooner than 24 hours after it is finally closed for transportation; the completed package must be held for 24 hours prior to its departure. The package must be inspected for leakage immediately before being loaded onto the transport vehicle.

3.5 DOT LABELS

Each package must be properly labeled as stipulated in the Hazardous Materials Table (49 CFR 172.101) for each shipping name. See Appendix E for label ordering information.

1. The DOT "Empty" label depicted in 49 CFR 172.450 is only for use on empty radioactive containers.
2. A material classed as a flammable solid which is water-reactive must also have a "Dangerous When Wet" label.
3. Labels must be clearly visible and placed adjacent to each other and next to the proper shipping name and identification number.
4. Flammable liquids with vapor pressures between 16 and 40 psia (30.7 and 54.7 psig, respectively) at 100° F must also have a DOT "Bung" label or tag, as identified in 49 CFR 173.119(i).

3.6 MARKING AND STICKERS

1. Any waste package, regulated as DW or EHW, must bear a properly completed EPA Hazardous Waste sticker (Figure 1). This sticker is available (see Appendix E) as a "fill-in-the-blank" type of label and should be completed as follows (please compare the item designation with the appropriate space on Figure 1):
 - a. The onsite Uniform Hazardous Waste Manifest identification number must be written on the upper right-hand corner.
 - b. The Uniform Hazardous Waste Manifest page number and waste item line identification letter from Item 11 (page 1) or Item 28 (continuation sheet) must be written on the upper left-hand corner.
 - c. The proper shipping name and identification number, in accordance with 49 CFR 172, must be entered here.
 - d. The Generator name and address must read:

U.S. Department of Energy
P. O. Box 550, 2401 Stevens Drive
Richland, Washington 99352

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- e. The EPA identification number must read: WA 789 000 8967
- f. The Dangerous Waste Codes must be entered here.
- g. The Accumulation Date must be marked here.
- h. This "MANIFEST DOCUMENT NO." blank should NOT be completed. This will be used for an offsite shipping manifest number.
2. Labels that are to be used for waste that is contaminated with PCBs, in accordance with 40 CFR 761 instructions, are shown in Figure 2.
3. When the generic proper shipping name, e.g., Waste Flammable Liquid, n.o.s., Hazardous Waste, liquid, n.o.s., is used, the constituent(s) that qualify the waste should be included in parentheses. This information MUST appear on all shipping papers and be clearly marked on the waste shipping container.
4. Packages containing inner packaging of liquid waste (labpacked liquids) must be marked "This End Up" on the top of the container.
5. The top and side of each container must be marked with a number, assigned by the FG, corresponding to the manifest number and a unit number (e.g., 25236 (1), 25236 (2), etc.). This number enables the waste package to be matched with the proper documentation. Unit numbers will be recorded as needed on the Uniform Hazardous Waste Manifest.
6. The weight of each container, if it exceeds 110 pounds, must be marked on the side and top of the container.
7. Waste packages of hazard class ORM-A, ORM-B, ORM-C, ORM-D or ORM-E must have the hazard class marked on the container adjacent to the EPA Hazardous Waste label. It must be placed on the side of the container, and it must be enclosed in a rectangle. This marking is usually hand marked on the container as shown below:

ORM-A

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3.7 LABPACKS

Small containers of dangerous waste may be overpacked together into drums as "labpacks", according to WAC 173-303-161 and 49 CFR 173.12. A list of regulatory labpack requirements (Figure 4) will appear as an attachment to applicable disposal analysis documentation. The following information is of special importance:

1. These are the only DOT hazard classes that are allowed in labpacks:

- o Flammable Liquid
- o Flammable Solid
- o Oxidizer
- o Corrosive Material
- o Combustible
- o Poison B
- o ORM-A
- o ORM-B
- o ORM-C
- o ORM-E

2. By regulation these wastes must not be packaged into labpacks:

- o acrolein
- o bromine pentafluoride
- o bromine trifluoride
- o chlorine trifluoride
- o fuming nitric acid
- o pyrophoric liquids
- o fuming sulfuric acid
- o reactive wastes, other than cyanide or sulfide-bearing wastes, which have not been treated or rendered nonreactive.

3. Incompatible wastes which might, if mixed, produce heat, pressure, fire, explosion, violent reaction, toxic dusts, fumes, mists, or gasses or flammable fumes or gasses, must not be packaged in the same outer container. Labpacked wastes must be compatible with the packaging.

4. Only wastes of the same DOT hazard class may be packaged in the same outer container.

5. A generic proper shipping name from the DOT Hazardous Materials Table (49 CFR 172.101) may be used in place of specific chemical names when two or more waste materials in the same hazard class are placed in the same labpack. This proper shipping name will be used for marking the drum and completing the Uniform Hazardous Waste Manifest.

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9/24/97 16:59

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Examples are: "Waste Acid, Liquid, n.o.s." or "Waste Flammable Liquid, n.o.s." If a more specific name is available, (e.g., a labpack of several containers of the same chemical), it must be used.

6. Any absorbent material used in labpacks must not be capable of dangerous reaction, decomposition, or ignition, if mixed with the contents of the inner containers. Compatibility with the absorbent must be documented, according to WAC 173-303-161 and WAC 173-303-395.
7. An itemized listing of the chemicals, their concentrations and quantities per labpack must be kept by the FG, must be readily available in case of an emergency during transport (attached to container), and must be available for preparing annual reports, in accordance with WAC 173-303-161. The FG must supply a copy of this list to the SWE, and must affix a second copy of this list, encased in plastic, to the top of the labpack prior to transport.
8. All labeling and marking requirements applicable to other hazardous wastes also apply to labpacks.

4.0 DISPOSAL ANALYSIS DOCUMENTATION

The disposal analysis documentation is prepared from the regulatory requirements compiled in WHC-CM-5-16, Section 4.0, "Waste Designation," paragraphs 1.0 and 2.0. This documentation normally consists of the following:

1. Cover transmittal with general instructions (Figure 5a);
2. Waste-specific packaging, labeling, and marking instructions (Figure 5b).
3. Waste Shipping Summary Table (Figure 5c);
4. Applicable auxiliary attachments:
 - o EPA Hazardous Waste Sticker (Figure 1)
 - o PCB waste stickers (Figure 2)
 - o examples of various DOT labels (Figure 3)
 - o labpack packaging requirements (Figure 4)
 - o container marking example (Figure 5d)

The disposal analysis documentation is prepared and distributed by the SWE. The original documentation is transmitted to the FG; copies are distributed to the Inspector, the Transporter, and each applicable facility Operator; and a copy is retained in the SWE auditable file.

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When approved and distributed, the disposal analysis documentation officially represents the waste shipment, and should be used to package the waste for transport and to complete the Uniform Hazardous Waste Manifest. The FG must notify SWE in writing (letter, memorandum, marked-up copy of the disposal analysis) of any additions, deletions or corrections to the waste shipment prior to inspection and transport. The SWE auditable file is used in the preparation of required reporting activities and must accurately represent each waste shipment.

5.0 ROUTINE WASTE ANALYSIS

For FGs of frequent and identical wastes, "routine" waste analysis will speed up the processing of waste. Approval is given only for a specific waste in a specific container and must be renewed annually. The necessary steps for setting up a "routine" are listed below.

1. The FG submits a chemical waste disposal request marked "Routine Waste" to the SWE.
2. The SWE returns to the FG an assigned waste disposal analysis routine identification number, and an approved routine waste disposal analysis containing the following:
 - a. waste designation.
 - b. packaging and shipping requirements.
 - c. identification of an appropriate waste receiving facility.
3. The FG packages the waste in accordance with the disposal analysis.

When a routinely generated waste is ready for shipment, contact a SWE representative. The SWE representative will complete a Chemical Waste Disposal Request form, assign a Uniform Hazardous Waste Manifest number and compile the necessary documentation.

When contacting the SWE, please state that this is a routinely generated waste, and provide the following information:

- a. Routine Disposal Analysis Reference No: XXXX
- b. Specific waste type.
- c. Number, size and type of container for each waste.
- d. Total quantity of each waste.
- e. Accumulation date for each waste.
- f. Follow up with a DSI to SWE

Upon receipt of proper documentation from the SWE, the generator is expected to complete the Uniform Hazardous Waste Manifest for shipment.

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Figure 1. EPA Hazardous Waste Sticker.

(b)----> PAGE 1 ITEM A (WHC) 00000(1) <----(a)

HAZARDOUS WASTE

STATE AND FEDERAL LAW
PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR
PUBLIC SAFETY AUTHORITY, AND THE
WASHINGTON STATE DEPARTMENT OF ECOLOGY,
OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

(c)----> PROPER D.O.T. SHIPPING NAME _____ UN or NA# _____ <----(c)

(d)----> GENERATOR INFORMATION:
NAME U.S. DEPARTMENT OF ENERGY
ADDRESS 2355 STEVENS DR. P.O. Box 550
CITY RICHLAND STATE WA ZIP 99352

(e)----> EPA IO NO. WA7880006967 EPA WASTE NO. _____ <----(f)

(g)----> ACCUMULATION START DATE _____ MANIFEST DOCUMENT NO. _____ <----(h)

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES
STYLE WHSPEC-P

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Figure 2. PCB Waste Stickers.

PROPER U.S.T. SHIPPING NAME		NO HAZARDOUS SUBSTANCE SOLID, N.O.S. (POLYCHLORINATED BIPHENYLS)		HA8188	
ORM-E		(RQ)			
WASTE FOR DISPOSAL					
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL					
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY					
GENERATOR INFORMATION:					
NAME <u>U.S. DEPT. OF ENERGY</u>					
ADDRESS <u>P.O. BOX 180 1401 STEVENS DRIVE</u>					
CITY <u>RICHLAND</u>		STATE <u>WA</u>		ZIP <u>99352</u>	
EPA <u>WAT99006987</u>		EPA		WASTE NO.	
MANIFEST					
DOCUMENT NO.		DATE PLACED			
DATE REMOVED FROM SERVICE		IN STORAGE			
TOTAL WT. IN GROSS					
CONTAINS TOXIC WASTE					
HANDLE WITH CARE!					

PROPER U.S.T. SHIPPING NAME		(POLYCHLORINATED BIPHENYLS)			
WASTE FOR DISPOSAL					
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL					
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY					
GENERATOR INFORMATION:					
NAME <u>U.S. DEPT. OF ENERGY</u>					
ADDRESS <u>P.O. BOX 180 1401 STEVENS DRIVE</u>					
CITY <u>RICHLAND</u>		STATE <u>WA</u>		ZIP <u>99352</u>	
EPA <u>WAT99006987</u>		EPA		WASTE NO.	
MANIFEST					
DOCUMENT NO.		DATE PLACED			
DATE REMOVED FROM SERVICE		IN STORAGE			
TOTAL WT. IN GROSS					
CONTAINS TOXIC WASTE					
HANDLE WITH CARE!					

CAUTION	
CONTAINS	
PCBs	
(Polychlorinated Biphenyls)	
<p>A toxic environmental contaminant requiring special handling and disposal in accordance with U.S. Environmental Protection Agency Regulations 40 CFR 761—For Disposal Information contact the nearest U.S. E.P.A. Office.</p>	
<p>In case of accident or spill, call toll free the U.S. Coast Guard National Response Center: 800:424-8802</p>	
<p>Also Contact: Hanford Patrol 811 or 373-3800 Tel. No. Utility Dispatch 373-2320 or 373-2321</p>	
<p>PCBP Printed by LABELMASTER, Inc. of AMERICAN LABELMARK CO. CHICAGO, IL 60646</p>	

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Figure 3. DOT Hazards Labels.



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Figure 4. Labpack Requirements.

ATTACHMENT TO DISPOSAL ANALYSIS

PACKAGING REQUIREMENTS FOR LABPACKS
(OVERPACKS CONTAINING INNER CONTAINERS
OF HAZARDOUS WASTE)

1. Regulations applicable to labpacks are found in WAC 173-303-161 and 49 CFR Part 173.12.
2. Hazardous waste must be packaged in non-leaking inside containers.
3. Inside packaging must be either glass containers of 1-gallon capacity or less, or metal or plastic containers of 5-gallon capacity or less. They must be labeled as to contents.
4. Inside packaging must be compatible with the wastes they contain. The containers must not react dangerously with, be decomposed by, or be ignited by the contained waste.
5. Inside containers must be tightly and securely sealed and, to the extent possible, should be full and contain as little air as possible to minimize voids.
6. Inside containers must be overpacked in an open-head, DOT-specification metal shipping container of not more than 416-liter (110-gallon) capacity.
7. Inside containers must be surrounded by, at a minimum, a sufficient quantity of absorbent material to completely absorb all of the liquid contents of the inside containers. Normally, a 2:1 ratio of absorbent to liquid is acceptable. No more than 15-gallons of liquid should be overpacked in a 55-gallon drum.
8. The metal outer container must be full after packing with inside containers and absorbent material.
9. The absorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inner containers.
10. Reactive wastes, other than cyanide- or sulfide-bearing waste, as defined in WAC 173-303-090(7)(a)(v), must be treated or rendered nonreactive prior to packaging in a labpack. Cyanide- or sulfide-bearing waste may be labpacked without first being treated or rendered nonreactive.
11. Wastes meeting the hazard class definition of flammable liquid, flammable solid, oxidizer, corrosive material, Poison B, or ORM-A, B, C, and E may be packaged in labpacks for highway transport.
12. Each outside packaging may contain only one DOT hazard class AND the wastes must be chemically compatible.
13. A generic proper shipping name from 49 CFR Part 172.101 may be used in place of specific chemical names when two or more compatible wastes of the same hazard class are packaged in the same outer container.
14. Gross weight may not exceed 450 pounds or the rated capacity of the drum, whichever is less.
15. The following materials must not be labpacked:
 - acrolein
 - bromine pentafluoride
 - bromine trifluoride
 - chloric acid
 - chlorine trifluoride
 - fuming nitric acid
 - pyrophoric liquids
 - fuming sulfuric acid

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Figure 5a. Disposal Analysis Transmittal.
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CHEMICAL WASTE DISPOSAL ANALYSIS NO. _____

ISSUE DATE _____

WASTE GENERATOR

Name _____ Address _____

Organization _____ Telephone _____

Generator Logbook No. _____ Accumulation
Date _____

Waste Shipment Deadline Date _____

SITE HAZARDOUS WASTE ENGINEERING SUPPORT
2750E/A109/200 East (MSIN R1-51)

Disposal Analysis by _____ Telephone _____

Approval(s) _____
Site Hazardous Waste Engineering
Support Representative D. W. Wilson, ManagerINSPECTION: Inspection G. O. Boness
Representative 376-7627TRANSPORTATION: SEE APPLICABLE FACILITY FOR TRANSPORTATION REPRESENTATIVE.WASTE STORAGE/DISPOSAL DESTINATION(S) [Check applicable facility(s)]616 Nonradioactive Dangerous Waste Transportation P. L. Hemsworth
Storage Facility/616 Building/600 Area Representative 373-1881212-P PCB Storage Facility Transportation R. G. Dean
212-P Building/200 North Area Representative 376-1420
Facility S. M. Baker
Representative 373-3806Central Landfill Nonregulated Drum Transportation R. G. Dean
Storage Area/600 Area Representative 376-1420Central Landfill Trash Trench/600 Area
Shock Sensitive/Reactive/Explosive Representative M. R. Romsos
Waste Disposal 373-4032Other: _____****PICK UP ON MONDAYS & TUESDAYS ONLY - SCHEDULE APPROXIMATELY 1 WEEK IN ADVANCE.****Attachmentscc: S. M. Baker (PCB Facility only)
G. O. Boness
R. W. Brown (616 Facility only)
M. R. Ibatuan (616 Facility only)Central Landfill Operator
M. R. Romsos
SHWES File

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Figure 5a. Disposal Analysis Transmittal.
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GENERAL WASTE DISPOSAL/STORAGE INSTRUCTIONS

All waste designations, packaging, shipping, and administrative activities and documentation are subject to audit by authorized Washington Department of Ecology (Ecology), U. S. Department of Energy (DOE), and contractor personnel. The activities related to disposal of the referenced waste(s) must adhere to requirements in every detail. Generators who fail to adhere to requirements will have their disposal privileges revoked by Ecology, and may be eligible for penalties as defined in governing regulations.

All hazardous wastes must be packaged and transported according to Washington State Regulations Chapter 173-303 WAC and Department of Transportation (DOT) Regulations 49 CFR. Improperly packaged wastes will not be accepted by site disposal facility personnel. The Generator may be required to correct the manifest and/or packaging discrepancies at the receiving facility.

Preparation for Shipment

Wastes must be packaged, labeled, marked, and manifested by the Generator according to specific instructions provided. Labels and Uniform Hazardous Waste Manifest forms are available as store stock items.

Inspection

When the waste has been properly packaged and manifested, the shipment must be inspected by the Westinghouse Traffic Department prior to transport. The Generator should schedule this preshipment inspection by contacting the Westinghouse Inspection Representative.

Manifest

The properly completed Uniform Hazardous Waste Manifest(s) will be initiated by the Generator and must be presented at the time of the inspection. The manifest must be initialled by the Traffic Department representative to verify generator compliance with the packaging instructions. The Generator may NOT make any unauthorized additions, deletions, or alterations to a manifest after the manifest has been initialled by the Traffic Department representative. More than one manifest may be required, depending on shipping destinations and waste compatibility. When shipping hazardous waste under a routine disposal analysis the Generator must reference the routine disposal analysis number in line 15 of the manifest. When the Transporter arrives to transport the waste, the Generator or his representative must obtain the Transporter's signature, and retain the tissue "generator copy". The original and all remaining copies must accompany the shipment. The original copy of the manifest will be returned to the Generator when the shipment is complete. Waste generators must retain the signed original copy of the manifest in an auditable file.

Radiological Release

The Generator is responsible for obtaining necessary radiological release documentation. The Transporter will NOT accept any nonradioactive hazardous waste shipment that does not have documentation of an unconditional radiological release or documentation of exemption from unconditional survey. This documentation is only applicable for a 24-hour period following its issuance.

Transportation

The Generator is responsible for arranging transportation by contacting the Westinghouse Transportation Representative. ARRANGEMENTS SHOULD BE MADE AT LEAST ONE WEEK PRIOR TO ANTICIPATED TRANSPORT DATE.

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Figure 5b. Shipping Instructions.
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DISPOSAL ANALYSIS NO.OFFSITE DISPOSAL - 616 NONRADIOACTIVE DANGEROUS WASTE STORAGE FACILITY

Waste items listed for offsite disposal must be properly packaged, labeled and manifested for shipment to an offsite disposal facility in accordance with State of Washington Administrative Code, Department of Ecology Dangerous Waste Regulations, Chapter 173-303 WAC. The Hanford generator has the responsibility for packaging and for shipping the waste to the offsite staging facility: Nonradioactive Dangerous Waste Storage Facility, 616 Building/600 Area. Offsite disposal shipments originating from this facility will be arranged by Westinghouse.

The waste generator must comply with the following requirements for packaging, labeling and marking wastes for offsite disposal:

Packaging:

*THIS AREA IS USED TO PROVIDE WASTE-SPECIFIC
PACKAGING REQUIREMENTS IN ACCORDANCE WITH THE
APPLICABLE REGULATIONS.*

- o Each container must have bungs tightly in place, as well as caps on inner containers. In addition, all gaskets, seals, and bungs must be carefully inspected and replaced if necessary.
- o Each container must be strong, tight, clean, and in good condition.
- o All container weights must be restricted to 450 pounds or less when possible. If this is not possible, contact Bob Dean on 375-1420 one week prior to the shipping date.

Labeling:

- o Any DOT label(s) specified on the attached table must be applied to each container. Labels may be obtained from Westinghouse Central Stores.
- o Labpacked drums must bear a specific contents list, encased in plastic, and affixed to the drum.
- o A properly completed EPA Hazardous Waste sticker (see attached example) must be applied to each container.
 - The DOT proper shipping name (including punctuation) must appear EXACTLY as specified on the attached table.
 - Please use waterproof permanent ink.
 - The label must be legible.

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Figure 5b. Shipping Instructions.
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DISPOSAL ANALYSIS NO.

Marking:

- o The container(s) must be legibly numbered on the top and sides using the manifest number and a unique container number, e.g.,
- o The DOT hazard class (ORM-) must be marked on the side of each appropriate container and enclosed in a rectangle.
- o The weight of each outer container exceeding 110 pounds must be marked on the top and side of the container.
- o "This End Up" must be marked on the TOP of each container. DO NOT USE STICKERS WITH ARROWS.
- o Overpacked drums must be marked "SALVAGE DRUM" on the side of the drum.
- o In accordance with 49 CFR 172.304, all markings must be legible, durable, and in a color which contrasts with the container.

Inspections:

- o The container(s) must be properly marked, labeled, and made readily accessible prior to the inspection.
- o DO NOT STACK CONTAINERS.

Manifests:

- o On-site manifest document numbers (item 1 on page 1, item 21 on continuation pages) should be five digit numbers with the contractor prefix in parenthesis. For example, disposal request number WHC-24-011 should be printed as follows:

(WHC) 24011

- o The address portion of the Uniform Hazardous Waste Manifest (item 3 on page 1, item 23 on continuation pages) should be filled out similar to the following example:

DEPARTMENT OF ENERGY, RICHLAND OPERATIONS, 340/300 AREA (332)
P.O. BOX 550, 2401 STEVENS DR., RICHLAND, WA 99352
(509) 373-1218 ATT: I.M. GENERATOR R2-D2

- o In the example above, Department of Energy, Richland Operations is the generator, 340/300 Area is the location where the waste was consolidated and offered for transportation, and 332 is the actual generating facility. The street address on the following line is what appears on the Environmental Protection Agency Label, followed by the generator phone number, name, and mail stop number.

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Figure 5b. Shipping Instructions.
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- o Generators offering a Land Banned waste for transportation must indicate on the manifest each material that is restricted. For example, a liquid waste containing F-listed solvents should be printed as:

Waste Flammable Liquid, n.o.s.
(land-ban F003)

Wastes which are restricted will be noted on the analysis sheet.

Radiological Release:

- o Arrangements should be made to obtain radiological release documentation or exemption from survey documentation following the inspection. Please note that this documentation is only applicable for a 24-hour time period following its issuance.
- o Each container in a shipment must bear a radiological release sticker to be acceptable for transport.

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Figure 5c. Shipping Summary Table

[illegible]

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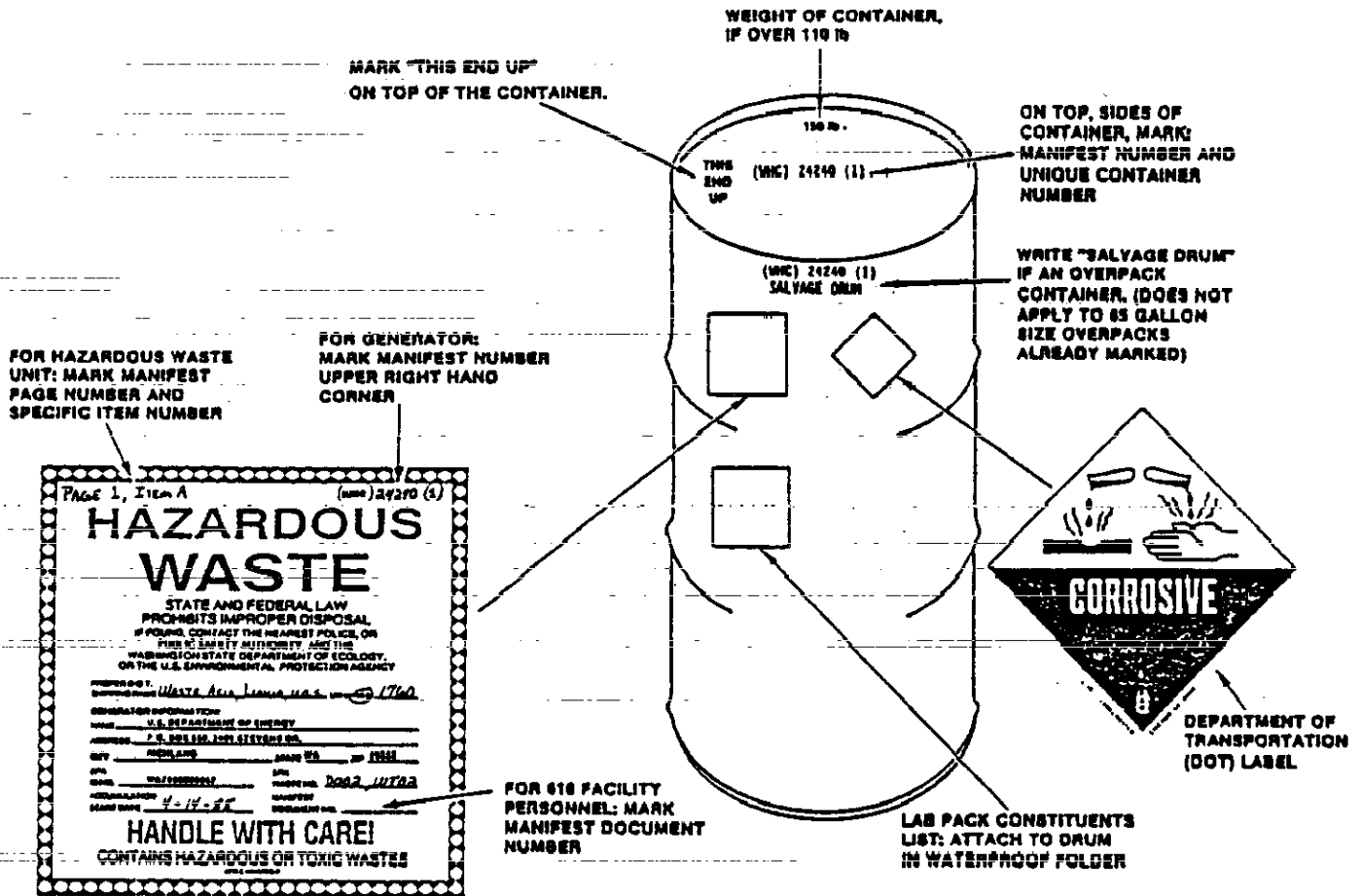
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WASTE DISPOSAL ANALYSIS

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Figure 5d. Container Marking Example.

CONTAINER MARKING REQUIREMENT
(EXAMPLE)

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HAZARDOUS WASTE MANAGEMENT

Effective Date December 20, 1989
Organization DWM/Solid Waste
Engineering

TITLE:

Approved by

WASTE TRANSPORT


H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to provide information concerning the final steps necessary for nonradioactive dangerous waste transport to waste storage/disposal facilities. After a waste shipment has been properly packaged, labeled, and marked in accordance with governing state and federal regulations, it must be manifested, inspected, a radiological release obtained, and transportation arranged. Also see WHC-CM-2-14, Hazardous Material Packaging and Shipping.

2.0 SHIPPING MANIFEST

A Uniform Hazardous Waste Manifest (Figure 1) as required by the U.S. Department of Ecology, Environmental Protection Agency (EPA), and U.S. Department of Transportation (DOT) must accompany all shipments of nonradioactive dangerous waste. Each waste shipment to a specific facility requires a separate manifest. The manifest is prepared by the Facility Generator (FG) and must be presented to the Inspector at the time of the scheduled pre-transport inspection. (Consult Appendix E for instructions for obtaining the Uniform Hazardous Waste Manifest forms.)

NOTE: Corrosive liquids must not be shipped above or adjacent to oxidizers, flammable solids, or organic peroxides. Segregation of hazardous wastes is specified in 49 CFR 177.848. General requirements for loading and unloading hazardous wastes are given in 49 CFR 177.834.

2.1 REQUIRED INFORMATION

The following information must be entered on each Uniform Hazardous Waste Manifest:

NOTE: The manifest is a 5-carbon-copy form. A typewriter or hard-point pen should be used. All copies must be legible.

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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The item numbers in parentheses refer to the item numbers in the manifest continuation page.

Item 1: Enter the Hanford Generator EPA Identification Number,
(Item 21) "WA 789 000 8967," and the unique manifest document number which is assigned by SWE.

Item 2: Enter the total number of pages used to complete the
(Item 22) manifest (first page plus continuation sheets).

Item 3: Enter the Generator's name and mailing address.
(Item 23)

DEPARTMENT OF ENERGY, RICHLAND OPERATIONS, 340/300 (332)
P.O. BOX 550, 2355 STEVENS DR., RICHLAND, WA 99352
(509) 373-1218 ATT: I.M. GENERATOR R2-D2

Item 4: Enter a telephone number where facility personnel may be
(N/A) reached in the event of an emergency.

Item 5: Enter "Westinghouse Hanford Company" in this block.
(Item 24) (Enter "Transporter 1" in this block.)

Item 0: Enter the Transporter telephone number.
(Item 0)

Item 6: Enter the Hanford USEPA ID number, "WA 789 000 8967."
(Item 25)

Item 7: Enter "N/A" in this block

Item 8: Enter "N/A" in this block.
(Item 27)

Item 9: Enter the name and complete site address of the facility
(N/A) designated to receive the waste listed on the manifest.

Nonradioactive Dangerous Waste Storage Facility
616 Building, 600 Area

PCB Storage Facility
212-P Building, 200 North Area

Central Landfill Nonregulated Drum Storage Area
600 Area

Item H: Enter the receiving facility telephone number.
(N/A)

616 Facility (509) 373-5013/373-5103

212-P Facility (509) 373-3806

Central Landfill (509) 376-6748

373-1218

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Item 10: Enter the Hanford EPA Identification Number,
(NA) "WA 789 000 8967."

Item 11: Enter the DOT Proper Shipping Name, Hazard Class and
(Item 28) Identification Number (UN/NA) for each waste, as
identified on the Disposal Analysis Summary Table (Section
5.0 of this manual, Figure 5c).

NOTE: If additional space is needed for waste descriptions, enter
the additional information in Block J, page 1, or item 28,
continuation sheet.

Item 12: Enter the number of containers for each waste and the
(Item 29) appropriate abbreviation for the type of container(s).

DM = Metal Drum, Barrel, Keg
DW = Wooden Drum, Barrel, Keg
DF = Fiberboard or Plastic Drum, Barrel, Keg
TP = Tank, portable
TT = Cargo Tank (Tank Truck)
TC = Tank Car
DT = Dump Truck
CY = Cylinder
CM = Metal Box, Carton, Case
CW = Wooden Box, Carton, Case
CF = Fiber or Plastic Box, Carton, Case
BA = Burlap, Cloth, Paper or Plastic Bag

Item 13: Enter the total quantity of waste described on each
(Item 30) line. Containers and inner liners are not considered
part of the waste when measuring or calculating the
quantity of dangerous waste. In addition, only the
weight of the residues in non-empty or non-rinsed
containers or inner liners must be considered when
determining waste quantities.

Item 14: Enter the abbreviation for the appropriate unit of
(Item 31) measure.

G = Gallon (liquids only)
P = Pound
T = Ton (2000 lbs)
Y = Cubic Yard
L = Liter (liquids only)
K = Kilogram
M = Metric Ton (1000 kg)
N = Cubic Meter

Item I: Enter the applicable waste number(s) for the waste that
(Item R) is described on each line.

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Item J: FGs may use this space to indicate special transportation,
(Item S) treatment, storage, or disposal information; or additional waste package information.

Item 15: FGs may use this space to indicate special transportation,
(Item 32) treatment, storage, or disposal information, routine disposal analysis cross-reference number, or additional waste package information. This space may be used to indicate storage cell information for waste being transported to the 616 Facility. This storage cell information will be stipulated on the Disposal Analysis Shipping Summary Table (Section 5.0 of this manual, Figure 5c).

Item 16: The FG must read, sign, and date the certification statement. This certification contains two parts: the first paragraph pertains to the transport of the shipment; the second paragraph is concerned with a generator waste minimization program.

NOTE: In order to sign a manifest as the waste "generator," a Hanford Site employee must successfully complete the Generator Hazardous Materials Safety Training (006G) and the Hazardous Waste Shipment Certification (006S) courses.

The Inspector will initial this space following inspection to indicate FG compliance with the shipping requirements.

Item 17: The Transporter must sign and date this block to
(Item 33) acknowledge acceptance of the waste described on the manifest.

Item 18: Since Westinghouse Hanford Company Transports all
hazardous waste, enter (Item 34) "N/A" in this block.

Item 19: The Receiving Facility Operator must note in this space
(Item 35) any significant discrepancy between the waste described on the manifest and the waste actually received at the facility.

Item 20: The Receiving Facility Operator signs and enters the
(N/A) date of receipt in this space to certify receipt of hazardous materials covered by the manifest, except for discrepancies noted in Item 19.

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2.2 REQUIRED DISTRIBUTION

Following is a list of the required distribution for the Uniform Hazardous Waste Manifest.

1. After obtaining the initials of the Inspector and the Transporter's signature, the FG removes and retains the "Generator" carbon copy of the manifest.
2. After obtaining the signature of the receiving facility Operator, the Transporter removes and retains the "Transporter #1" carbon copy of the manifest.
3. After signing the manifest, the receiving facility Operator removes and retains the "TSD Facility" carbon copy. The Operator then forwards the original and remaining copies to the SWE.
4. The SWE makes a copy of the original for reference in the annual report, and returns the original manifest to the FG.

NOTE: A FG who does not receive the original manifest within 35 days after shipment must contact the transporter, the receiving facility operator, and SWE to determine the status of the waste shipment.

3.0 INSPECTION

The Inspector is responsible for ensuring that all shipments of nonradioactive dangerous waste comply with the packaging and transporting requirements of the CFR 49 Parts 100 to 199, "Transportation." The Inspector also ensures that containers designated as empty do not contain excess liquids or solids inside.

The FG arranges for inspection of waste shipments by contacting the Inspection Representative stipulated on the disposal analysis documentation transmittal form (Section 5.0 of this manual, Figure 5a).

Inspections are usually conducted at the FG's facility.

NOTE: It is important that the FG or designated representative be readily available at the appointed inspection time and site to avoid unnecessary delay.

At the time of the inspection, the FG must present a properly completed Uniform Hazardous Waste Manifest to the Inspector. The Inspector must initial or sign the manifest to show approval to transport the waste shipment as packaged and labeled.

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Following inspection and approval of the waste shipment, transportation arrangements must be arranged by the FG. If radiological release is required the waste shipment must be transported within the following 24-hour period.

4.0 RADIOLOGICAL RELEASE

Since waste is eventually shipped offsite or to nonregulated areas, each and every nonradioactive dangerous waste item and its contents MUST be unconditionally released as defined below; also see Appendix D:

1. The waste must have an Unconditional Radiological Release Survey signed by authorized personnel, or
2. The waste must have an Exemption from Radiation Protection Unconditional Survey signed by authorized personnel. The Health Physics Department publishes a site-wide list of personnel (Appendix D) who are authorized to certify that specific materials have not been in a radiation area or are free of contamination, or
3. The waste is both generated and stored in a facility where radiation protection clearance is not required. Verbal approval from authorized personnel is required. Lists of authorized personnel and facilities that are exempt from radiation protection surveys can be found in Appendix D. The FG must record the name of the authorizing personnel granting verbal approval.

Radiological release must be obtained for each waste package and the clearance stickers/documentation must be attached to each container or must accompany the Uniform Hazardous Waste Manifest. Clearance stickers/documentation are only valid for a 24-hour period following their issuance. Transportation must be arranged within this time period to ensure the validity of the radiological release. No chemical waste will be accepted for shipment or disposal without the appropriate radiation clearance.

5.0 TRANSPORTATION

The Transporter is responsible for transporting all onsite shipments of nonradioactive dangerous waste in accordance with 49 CFR. The FG can arrange transportation for inspected and approved shipments by contacting the Transportation Representative specified on the waste disposal analysis transmittal (Section 5.0 of this manual, Figure 5a).

NOTE: Transportation arrangements should be made at least one week prior to the anticipated transport date. Waste shipments must be scheduled well in advance of the 90-day shipping deadline in order to prevent violations caused by scheduling conflicts or situations outside the control of the transporter of the storage facility.

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5.1 ROUTINE TRANSPORT

The Transporter has established a routine waste transport schedule to minimize the expense of numerous trips to storage or disposal facilities. The Transporter requires that waste shipments be scheduled at least one week in advance of the desired shipment date. The Transporter will charge all participating FGs equal shares of the cost of transport.

5.2 SPECIAL TRANSPORT

In the event an FG requires transport of waste on a nonscheduled transport day, a special transport can be arranged by contacting the Transporter Representative. The FG will bear the entire cost of the special transport.

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WASTE TRANSPORT

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Figure 1. Uniform Hazardous Waste Manifest.

PRINTED BY: HAZARDOUS MATERIALS PUBLISHING CO., KUTZTOWN, PA. 19630 215-683-6721

REPORTABLE QUANTITY VALUE RQ's - 5000/1000/100/10/1		REPORT ANY "RQ" DISCHARGE TO NATIONAL RESPONSE CENTER (800) 424-9802, AND 911 EMERGENCY NUMBER OR LOCAL OPERATOR. EMERGENCY CONTACT: CHEMTREC (800) 424-9300	PLACARD: PROVIDED	AGENCY DISPLAY OF ESTIMATED BURDEN This reporting burden for this collection of information is estimated to average 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment, storage and disposal facilities. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington, DC 20503, U.S. Department of Administration, Paperwork Project, (01) 14 Street, SW.
a. RQ =	c. RQ =			SEE SECTION 15
b. RQ =	d. RQ =			

Please print or type (Form designed for use on site (12-pitch typewriter))

Form Approved OMB No. 2050-0039 Expires 9-30-91

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law
3. Generator's Name and Mailing Address		4. Generator's Phone ()		A. State Manifest Document Number	
5. Transporter 1 Company Name		6. US EPA ID Number		B. State Generator's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		C. State Transporter's ID	
9. Designated Facility Name and Site Address		10. US EPA ID Number		D. Transporter's Phone	
				E. State Transporter's ID	
				F. Transporter's Phone	
				G. State Facility's ID	
				H. Facility's Phone	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
		No. Type			
16. Additional Designations for Materials Listed Above		17. Handling Codes for Wastes Listed Above			
18. Special Handling Instructions and Additional Information		AGENCY DISPLAY OF ESTIMATED BURDEN Public reporting burden for this collection of information is estimated to average 37 minutes for generators, 15 minutes for transporters, and 10 minutes for treatment, storage and disposal facilities. This includes time for reviewing instructions, gathering existing data, reviewing the form, Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington, DC 20503, U.S. Department of Administration, Paperwork Project, (01) 14 Street, SW.			
19. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway, according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threats to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford. Printed/Typed Name _____ Signature _____ Month Day Year _____					
20. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name _____ Signature _____ Month Day Year _____					
21. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name _____ Signature _____ Month Day Year _____					
22. Discrepancy Indication Space					
23. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in item 18 Printed/Typed Name _____ Signature _____ Month Day Year _____					

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Figure 1. Uniform Hazardous Waste Manifest (continuation sheet).

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XXXXXXXXXXXXXXXXXXXXXXXXXXXX

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)		21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.		
23. Generator's Name				L. State Manifest Document Number			
				M. State Generator's ID			
24. Transporter Company Name		25. US EPA ID Number		N. State Transporter's ID			
				O. Transporter's Phone			
26. Transporter Company Name		27. US EPA ID Number		P. State Transporter's ID			
				Q. Transporter's Phone			
28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.	
a.							
b.							
c.							
d.							
e.							
f.							
g.							
h.							
i.							
S. Additional Descriptions for Materials Listed Above		T. Handling Codes for Wastes Listed Above					
32. Special Handling Instructions and Additional Information							
33. Transporter Acknowledgement of Receipt of Materials		Date					
Printed/Typed Name		Signature		Month		Day	Year
34. Transporter Acknowledgement of Receipt of Materials		Date					
Printed/Typed Name		Signature		Month		Day	Year
35. Discrepancy Indication Space							

TRANS-PORTER

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HAZARDOUS WASTE MANAGEMENT

Effective Date December 20, 1989
Organization DWM/Solid Waste
Engineering

TITLE:

Approved by

GENERAL FACILITY MANAGEMENT


H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to provide a synopsis of Generating Facility management requirements as given in the WAC 173-303, so that all persons who have responsibilities for hazardous waste on the Hanford site will have an understanding of those requirements. The rules for storing and handling the waste itself are found in WHC-CM-5-16, Hazardous Waste Management, Section 2.0, "Waste Handling and Storage."

2.0 WASTE STORAGE AREAS

The WAC 173-303 rules apply. See WHC-CM-7-5, Environmental Compliance Manual, Part I, for WHC requirements.

2.1 SATELLITE STORAGE

A satellite area is a location at or near any point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste. Satellite storage areas must be managed to comply with the WAC 173-303-200. (See Section 2.0, part 3.1 for management of wastes in satellite accumulation areas.)

2.1.1 Rules for Satellite Storage

1. Conduct weekly inspections of storage areas, waste containers, and safety systems.
2. Inspections must be documented.
3. Inspection records must be maintained at the facility for 3 years.
4. Containers holding ignitable or reactive wastes must be stored in accordance with the Uniform Fire Code.

2.2 TEMPORARY (90-DAY) STORAGE

Management of temporary waste storage areas is essentially the same as for satellite areas, with the exception that any new accumulation areas constructed or installed after September 30, 1986, must have containment systems as specified in the WAC 173-303-630 (7). (See Section 2.0 of this manual, paragraph 3.2 for management of wastes in temporary storage areas.)

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2.2.1 Rules for Temporary Storage

1. All wastes in a temporary area must have an accumulation date.
2. Aisle space must be unobstructed for 3 feet and all drums and labels easily accessible.
3. Incompatible wastes in separate containers must be separated by a dike, berm, or wall, and must have separate containment systems.
4. Containment systems must:
 - Have sufficient capacity to contain 10% of the volume of all containers, or the volume of the largest container. If the area is unprotected from the weather it must also be able to contain the precipitation from a maximum 25-year storm of 24 hours duration.
 - Have a base free of cracks or gaps and sufficiently impervious to contain spills, leaks, and rainfall.
 - Have positive drainage control to prevent release of contaminated liquids and allow drainage of uncontaminated precipitation.
 - Have means to prevent water run on.

3.0 EMERGENCY PLANS FOR TEMPORARY STORAGE

Emergency prevention regulations are covered in WAC 173-303-340. Refer to WHC-CM-7-5 and WHC-CM-4-1, Emergency Plan, for instruction on how WHC meets regulations.

3.1 EMERGENCY PREVENTION REGULATIONS

The following systems and requirements must be met:

1. There must be internal communications systems.
2. There must be internal alarm systems.
3. Proper types of fire extinguishers must be provided.
4. Spill control and decontamination equipment must be on hand.
5. There must be adequate water for sprinklers and hoses.
6. Aisles must be kept clear and unobstructed.

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WASTE MINIMIZATION

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EXAMPLES: The substitution of propylene glycol, a nonregulated chemical, for ethylene glycol, a hazardous substance, for a pipe winterization project.

4.2 RECYCLING

Recycling techniques allow hazardous materials to be put to a beneficial use. These techniques may be performed onsite or at an offsite facility. Recycling techniques include the following:

1. Use/reuse.
2. Reclamation.

4.2.1 Use/Reuse

Recycling via use and/or reuse involves the return of a waste either to the originating process as a substitute for new material, or to another process as an input material.

EXAMPLES: The 100N Segregation Facility recovers usable gloves, clothing, and equipment, which are then cleaned and reused.

As a final cleanup of the 309 Building, 5000 pounds of lead were decontaminated and released for further use.

Operations Support Services regularly recycles waste antifreeze and solvent by using a cleaning unit purchased for the purpose.

4.2.2 Reclamation

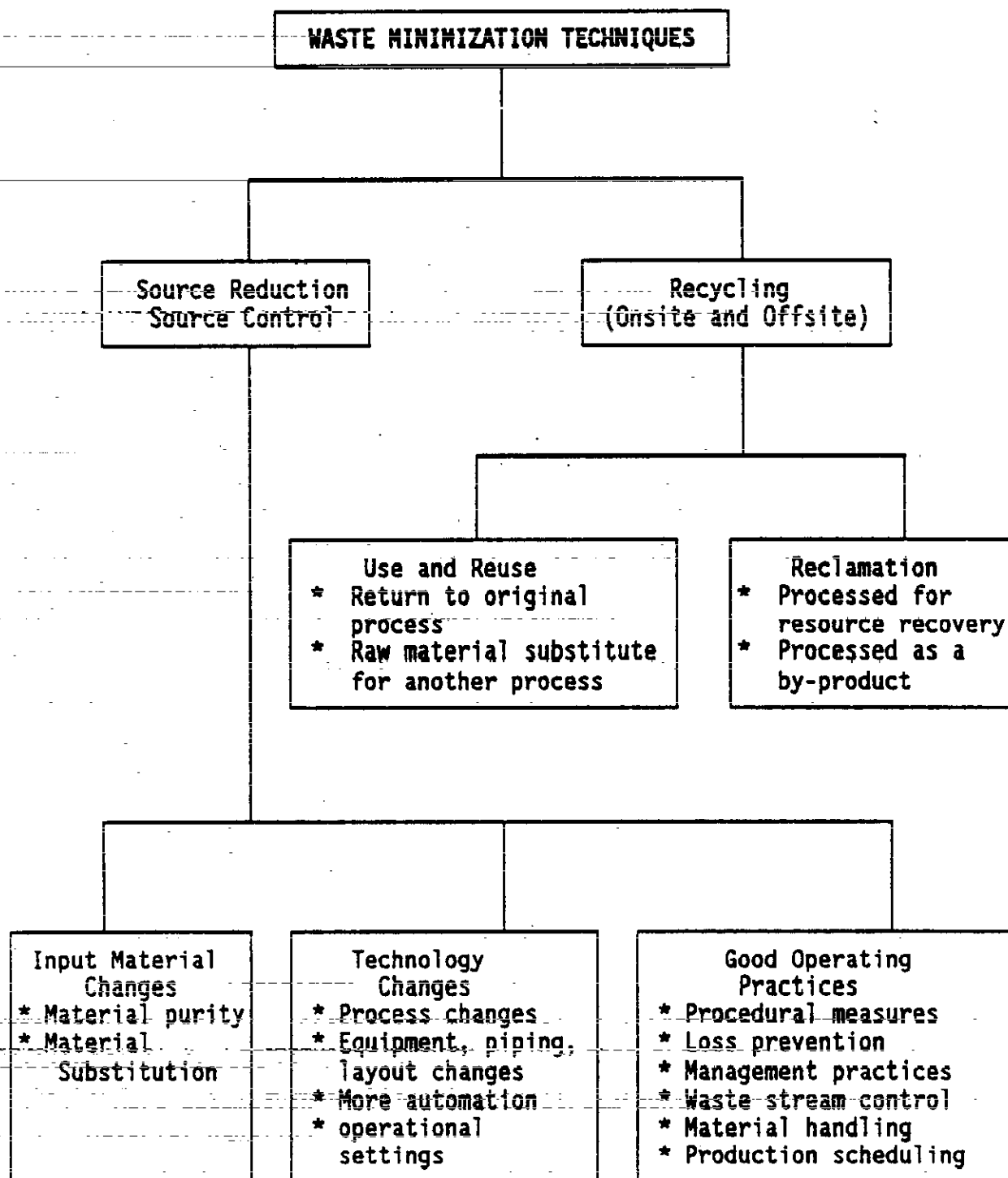
Reclamation is the recovery of a valuable material from a hazardous waste. Reclamation techniques differ from use and reuse in that the recovered material is not used in the facility; rather it is sold to another company.

EXAMPLE: Silver from photographic fixer solutions, waste oil, and empty drums are all wastes that are collected at Hanford for reclamation purposes.

5.0 EMPLOYEE PARTICIPATION

Waste minimization can only be successful with employees full participation. Employees should look for ways to minimize waste. Ideas should be discussed directly with management or through the existing Great Idea suggestion program.

Figure 1. Waste Minimization Techniques.



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Organization DWM/Solid Waste
Engineering

HAZARDOUS WASTE MANAGEMENT

TITLE:

Approved by

WASTE MINIMIZATION

H. F. Daugherty
H. F. Daugherty, Manager/
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to provide a description of company requirements for waste minimization. Examples of effective waste minimization techniques are given.

2.0 WESTINGHOUSE WASTE MINIMIZATION PROGRAM

The Westinghouse Waste Minimization Program is designed to ensure compliance with state and federal regulations and DOE orders. The Waste Minimization Team, within Defense Waste Management, is responsible for coordinating and implementing this program. Manual WHC-CM-1-1, Management Policies, MP 5.17, "Waste Minimization," and WHC-CM-1-3, Management Requirements and Procedures, MRP 5.44, "Waste Minimization Program," describe the Company requirements and responsibilities for waste minimization.

2.1 FACILITY-SPECIFIC WASTE MINIMIZATION PLANS

A key component of the Westinghouse Waste Minimization Program is the development of Facility-Specific Waste Minimization Plans. Any facility or activity which generates, treats, stores, or disposes of either a hazardous, radioactive, or mixed waste is required to have a waste minimization plan which documents goals, activities, and accomplishments toward the minimization of waste.

3.0 DEFINITIONS

Waste Minimization. The reduction of the amount of hazardous waste, that is generated, treated, stored, or disposed of. Minimization includes any SOURCE REDUCTION or RECYCLING activity if it reduces either the toxicity or quantity of hazardous waste. Such reduction must be consistent with the goal of minimizing threats to human health and the environment. It does not include treatment of generated waste (see Figure 1).

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WASTE MINIMIZATION

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4.0 MINIMIZATION TECHNIQUES

4.1 SOURCE REDUCTION

Source reduction techniques include good operating practices, technology changes and material changes. Hanford examples of each technique are given below.

4.1.1 Good Operating Practices

1. Changes in operational settings may improve efficiency so that less waste is produced.
2. Segregating waste streams may lower waste classification.
3. More efficient production scheduling can reduce waste.
4. Procedures can be changed to minimize waste.
5. Material handling techniques can be improved.

EXAMPLE: The 100N Segregation Facility is used to segregate radioactive and mixed waste to reduce the volume of waste and disposal costs. In addition, reusable items are segregated, such as gloves, clothing, and equipment.

4.1.2 Technology Changes

Many times changes in old technology to make it more efficient or the introduction of new technology will reduce the quantity and quality of hazardous waste.

Some suggestions are:

1. Increased automation.
2. Equipment, layout, and piping changes.
3. Process changes.

EXAMPLES: The feedpoint was changed in a plutonium extraction column, at PFP, after calculations showed that increased plutonium extraction and decreased toxicity (concentration of plutonium) was achievable.

4.1.3 Material Changes

The substitution of a less hazardous material is an excellent way to minimize waste.

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7. Local police and hospitals must be informed of hazards present.
8. Hanford patrol and Hanford fire department must be notified in writing of the location and hazards present when a temporary storage area is established.

3.2 CONTINGENCY PLANS AND EMERGENCY PROCEDURES

Contingency plans and emergency procedures must be in place per WAC 173-303-350. Refer to WHC-CM-4-1 for WHC requirements.

General requirements are:

1. A list of emergency contacts and phone numbers must be maintained and available at the facility.
2. A list of emergency equipment, capabilities and locations must be maintained and available at the facility.
3. There must be an evacuation plan.
4. There must be a written emergency response plan.
5. Plans must be revised if regulations change or plan fails.

4.0 INSPECTIONS

Each waste facility must be inspected according to the WAC 173-303-320. A written schedule for inspections must be maintained at the facility. Inspections must be documented in a log. Records must be maintained at the facility for at least 3 years. Inspections must include the following items:

1. Emergency equipment
2. Monitoring equipment
3. Safety equipment
4. Security systems
5. Containment systems
6. Problems identified

5.0 PERSONNEL REQUIREMENTS

Personnel working in hazardous waste generating facilities must be trained and work according to the WAC 173-303, and 29 CFR 1910.120.

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GENERAL FACILITY MANAGEMENT

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There must be a training plan which is directed by knowledgeable persons and training must be renewed annually. Records of training must be current and records for personnel who leave the facility must be kept for three years.

Training must include the following:

1. Classroom instruction in course 006G for persons who work with or generate hazardous waste.
2. Classroom instruction in courses 006G and 006S for FGs and all persons who sign shipping manifests..
3. On the job training course 006H or equivalent for handlers of hazardous wastes.
4. Training in the use and inspection of emergency equipment.
5. Training in the use of communication and alarm systems.
6. Training in response to fires and explosions.
7. Training in the shutdown of operations.
8. Training must be completed within 6 months of assignment.
9. Training must be according to a written plan.
10. Training records must be maintained at the facility.
11. Training must be updated yearly.

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HAZARDOUS WASTE MANAGEMENT

Organization

DWM/Solid Waste
Engineering

TITLE:

Approved by

RELEASES


H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to inform persons working with hazardous substances of the proper immediate response to unplanned releases and to advise what information must be gathered for reporting purposes.

2.0 DEFINITION OF RELEASE

2.1 RELEASE

A release is any spilling, leaking, pumping, emitting, emptying, discharging, injecting, leaching, dumping, or disposing to the environment. This includes releases to land, water, or air (including ventilation systems); releases to liquid effluent systems; releases into any containment system that is open to the atmosphere; releases from containers that result in loss of materials; and spread of contamination by plants or animals.

2.2 NONROUTINE RELEASE

Any statistically significant increase in the amount released via a continuous operational release. This includes spills.

3.0 REQUIREMENTS

Refer to WHC-CM-7-5, Environmental Compliance Manual, Part B, "Releases to the Environment." Also refer to WHC-CM-4-1, Emergency Plan, and the individually building Emergency response Plan.

4.0 FIRST RESPONSE

Immediate response to a spill should be according to the facility's emergency response plan. Notify your manager and/or the building emergency director.

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5.0 NOTIFY ENVIRONMENTAL PROTECTION

After calling 811 (if needed), and notifying management, Environmental Protection (EP) must be notified. The contact with EP will initiate other actions. Environmental Protection will call Solid Waste Engineering (SWE). The SWE will gather information to make a designation of the spill and to determine reporting requirements.

6.0 REPORTABLE QUANTITIES (RQ's)

When large enough quantities of certain chemicals are released into the environment a report must be made to Environmental Protection Agency (EPA), or Ecology. The list of chemicals and quantities subject to reporting can be found in 40 CFR 302.4.

The quantity listed in the column "Final RQ" is the reportable quantity for each substance in the Table 40 CFR 302.4. Unlisted hazardous substances designated in 40 CFR 302.4(b) have the reportable quantity of 100 pounds, except for those unlisted hazardous waste which exhibit EP toxicity as identified in 40 CFR 261.20 through 261.24.

For more details read the referenced sections of 40 CFR. Also refer to Appendix F in this manual for a list of RQ chemicals which are most likely to be found on the Hanford site.

In the State of Washington, spill requirements are covered under the WAC 175-303-145. All spills of a Washington State Dangerous Waste which are less than a RCRA RQ must still be reported to the state on a monthly basis. Reportable Quantities must be reported within 24 hours.

7.0 GATHERING DATA

Reporting and clean-up activities will be determined by the designation. Some items of information that must be gathered in order to determine reporting requirements are:

1. Chemical name(s) and weight percent concentrations.
2. An accurate estimate of the quantity of chemical released.
3. The facility and location where the release occurred.
4. The time, date, and duration of the release.
5. Medium and location into which the release occurred.
6. Cause and source of the release.

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7. Immediate corrective actions taken
8. Injuries or property damage
9. Name and telephone number of facility contact person.
10. Other information as requested. -- Quick response is essential in all cases.

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HAZARDOUS WASTE MANAGEMENT

Effective Date December 20, 1989
Organization UWM/Solid Waste
Engineering

TITLE:

Approved by

DANGEROUS WASTE ANNUAL REPORTS


H. F. Daugherty, Manager
Defense Waste Management

1.0 PURPOSE

The purpose of this section is to describe the annual reports required by the State of Washington. The annual reports are defined in WAC 173-303-390 and WAC 173-303-220 and must be submitted by March 1 of each year. The reports are prepared by the SHWES and contain information concerning onsite waste activities and waste shipments to offsite facilities.

2.0 APPLICABILITY

Two annual reports are prepared:

1. The Treatment, Storage, and Disposal (TSD) Facility Dangerous Waste Annual Report, which addresses all dangerous wastes received or treated by onsite facilities during the prior calendar year;
2. The Generator Dangerous Waste Annual Report which, in addition to the information contained within the TSD Dangerous Waste Annual Report, addresses dangerous wastes which were shipped offsite during the prior calendar year for disposal or recycling.

3.0 REQUIRED INFORMATION

The TSD Facility Dangerous Waste Annual Report must include the following:

1. All regulated quantities of waste received January 1 - December 31.
2. Total quantity of stored waste as of December 31.
3. Closure cost estimate for TSD Facilities.
4. Post-closure cost estimate for disposal facilities.
5. Manifest numbers.
6. Dates of receipt.
7. Waste status (type of regulation).
8. Waste physical state.
9. Chemical nature.

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10. Ecology waste description.
11. Container type.
12. Ecology dangerous waste number.
13. Ecology designation, "DW" or "EHW".
14. Mass of waste (volume is not acceptable).

(Entries are completed on Ecology Form #5.)

The Generator Dangerous Waste Annual Report must include the following:

1. All regulated quantities of waste generated January 1 - December 31.
2. All TSD facilities to which waste was shipped.
3. Transporters used.
4. Waste information (similar to that required for TSD Facility Dangerous Waste Annual Report).

(Entries are completed on Ecology Form #4.)

4.0 DATA SUBMITTAL**4.1 TREATMENT, STORAGE AND DISPOSAL FACILITIES**

1. Questionnaires will be sent to all permitted TSD facilities in December.
2. The TSD facility operations manager will fill out required information, verifying that all data is accurate and correct.
3. Questionnaires must be returned to SHWES no later than January 15.

4.2 FACILITY GENERATORS

1. Uniform Hazardous Waste Manifests will be used to document containerized wastes (including mixed waste) for inclusion in a waste-tracking database.
2. Printouts from the database will be sent to each generator to verify SHWES data against their waste shipments records.
3. Printout certification must be returned within 3 weeks.
4. Questionnaires will be sent requesting information regarding the wastes remaining in their facilities on December 31.
5. Questionnaires must be returned within 3 weeks.

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5.0 DATA CERTIFICATION

1. All data submitted by TSD facilities and generators must be signed and certified by Level III management in accordance with U.S. Department of Energy-Richland Operations Office (DOE-RL) requests.
2. Certification statement reads: "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine or imprisonment."

6.0 APPROVAL AND DISTRIBUTION

The annual waste reports are compiled from data submitted by Facility Generators and TSD facilities. Westinghouse Waste Management Division and the Environmental Division review the documents and submit them to DOE-RL for approval and signature. Reports are then submitted to Ecology.

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GLOSSARY OF TERMS

APPENDIX A - GLOSSARY OF TERMS

Accumulation Date. The date a generator first generates a dangerous waste in a temporary storage area, or accumulates 55 gallons total of dangerous waste, or 1 quart total of acutely hazardous waste in a satellite storage area. See WHC-CM-5-16, Hazardous Waste Management, Section 3.0, "Chemical Waste Disposal Request Form," paragraph 2.3.

"Acutely Dangerous" Waste. Any dangerous waste specifically identified on the WAC 173-303-9903 Discarded Chemical Products List as EHW by the Washington State Department of Ecology (Ecology). These wastes are identified as EHW in Appendix B, "Discarded Chemical Products List," column 3.

"Acutely Hazardous" Waste. Those items on the Discarded Chemical Products List (see Appendix B) and the Dangerous Waste Sources List (see Appendix C). Acutely Hazardous Wastes are those with dangerous waste numbers beginning with a "P" or those that show an "X" or an "A" in the Reason for Designation column.

Batch. Any waste which is generated less frequently than once a month.

Class 4 Oxidizer. Oxidizing material that can undergo an explosive reaction when catalyzed or exposed to heat, shock, or friction.

"Class 4 Oxidizer" is a term used by the National Fire Protection Association. The Nonradioactive Dangerous Waste Storage Facility (616-Facility) is not designed to contain more than 10 pounds total of Class 4 oxidizers at any time.

Combustible Liquid. Term used by the U.S. Department of Transportation (49 CFR 173.115) for liquids having closed cup flash points at or above 100°F and below 200°F.

Container. Any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

Dangerous Waste. The words "dangerous waste" refer to the full universe of regulated solid wastes designated as either dangerous OR extremely hazardous in WAC 173-303-070 through WAC 173-303-103. (See also "DW" and "EHW.")

DW (Dangerous Waste): The abbreviation "DW" refers to that part of the solid waste universe which is dangerous waste only, and not extremely hazardous waste.

EHW (Extremely Hazardous Waste). The abbreviation "EHW" refers to those dangerous wastes which are extremely hazardous.

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Extremely Hazardous Waste. Those "dangerous wastes" designated as extremely hazardous waste in WAC 173-303-070 through WAC 173-303-103.

Facility Generator (FG). The individual, by facility, who is responsible for the proper handling, storing, and shipping of hazardous waste.

Flammable Liquid. Term used by the U.S. Department of Transportation (DOT) (49 CFR 173.115) for liquids having closed cup flashpoints below 100°F.

Flammable Liquid, Class 1-A. Term used in the Uniform Fire Code for a liquid with a flashpoint below 73°F and a boiling point below 100°F. One of the cells in the 616 Facility is specifically designed for storage of Class 1-A liquids.

Flammable Liquid, Class 1-B. Term used in the Uniform Fire Code for a liquid with a flashpoint below 73°F and a boiling point at or above 100°F. One of the cells in the 616 Facility is specifically designed for storage of Class 1-B liquids.

Generator. Any person, by site, whose act or process produces dangerous waste or whose act first causes a dangerous waste to become subject to regulation. For the purposes of this manual, the Generator is the U.S. Department of Energy-Richland Operations Office (DOE-RL).

Hazardous Substance. A chemical substance that is listed in the 49 CFR 172.101, Appendix to the Hazardous Materials Table and exceeds its reportable quantity when packaged in a single container (see Reportable Quantity).

Ignitable. Term used in WAC 173-303-090 for a waste which can cause a fire through friction, absorption of moisture, or spontaneous chemical reaction, etc. This term generally applies to oxidizers as defined in 49 CFR 173.151. It also applies to liquids with flashpoints below 140°F.

Incompatible Waste. A dangerous waste which is unsuitable for placement in a particular device or facility because it may corrode or decay the containment materials, or is unsuitable for mixing with another waste or material because the mixture might produce heat or pressure, fire or explosion, violent reaction, toxic dusts, fumes, mists or gases, or flammable fumes or gasses.

Persistence. The quality of a material which retains more than half of its initial activity after one year (365 days) in either a dark anaerobic or dark aerobic environment of ambient conditions.

Psia, psig. Pounds per square inch absolute (psia); pounds per square inch gauge (psig).

Reportable Quantity. It is the quantity of material or waste that if released into the environment must be reported immediately to the National Response Center. Reportable quantities are listed in the Hazardous Materials Table 49 CFR 172.101 Appendix and in 40 CFR 302.4 (see Hazardous Substance).

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Satellite Storage Area. A location at or near any point of generation where wastes initially accumulate that is under the control of the operator of the waste generating process. See Section 2.0 of this manual, paragraph 3.1.

Solid Waste. Any solid, semi-solid, liquid or contained gaseous material, garbage, refuse, sludge or discarded commodity resulting from industrial, commercial, mining, agricultural, or community operations or activities, that is not a primary product of such operations or activities.

Some solid wastes, which are dangerous wastes, are identified in WAC 173-303-016. The reuse, use for energy recovery, reclamation, and speculative accumulation, as well as disposal of some of these wastes, are regulated by Ecology as described in WAC 173-303-016.

Uniform Hazardous Waste Manifest. The shipping document used to identify a dangerous waste that is being transported to a point of transfer, disposal, treatment, or storage.

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DISCARDED CHEMICAL PRODUCTS LIST

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APPENDIX B

Acutely Dangerous and Moderately Dangerous Products Lists:
WAC 173-303-9903, Combined in Alphabetical Order
Amended January 1989

<u>DANGEROUS WASTE NUMBER</u>	<u>SUBSTANCE</u>	<u>ECOLOGY HAZARD DESIGNATION</u>	<u>REASON* FOR DESIGNATION</u>
U001	Acetaldehyde	EHW	C
P023	Acetaldehyde, chloro-	EHW	B,H
U034	Acetaldehyde, trichloro-	EHW	H
P002	Acetamide, N-(aminothioxomethyl)-	EHW	B
U187	Acetamide, N-(4-ethoxyphenyl)-	DW	D, +
U005	Acetamide, N-9H, fluoren-2-yl	DW	?
P057	Acetamide, 2-fluoro-	EHW	B,H
U112	Acetic acid, ethyl ester	DW	D, I
P058	Acetic acid, fluoro-, sodium salt	EHW	A,H
U144	Acetic acid, lead salt	EHW	D, EP
U214	Acetic acid, thallium (I) salt	DW	?
P066	Acetimidic acid, N- (methylcarbamoyl)oxy thio-, methyl ester	EHW	B
U002	Acetone	DW	D, I
P069	Acetone cyanohydrin	EHW	A
U003	Acetonitrile	EHW	C, I
P001	3-(alpha-Acetylbenzyl)-4-hydroxycoumarin and salts	EHW	A
U004	Acetophenone	DW	D
U005	2-Acetylaminofluorene	DW	?
U006	Acetyl chloride	EHW	C,H,O,R
P002	1-Acetyl-2-thiourea	EHW	B
P003	Acrolein	EHW	X, I
U007	Acrylamide	EHW	C

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DESIGNATION

U008	Acrylic acid	EHW	C,0,I
U009	Acrylonitrile	EHW	C,+,I
U150	Alanine, 3- p-bis(2-chloroethyl) amino phenyl-,L-	DW	+
P070	Aldicarb	EHW	B
P004	Aldrin	EHW	X,H
P005	Allyl alcohol	EHW	B,I
P006	Aluminum phosphide	EHW	B,R
U328	2-Amino-1-methylbenzene	DW	D,+
U353	4-Amino-1-methylbenzene	DW	D
P007	5-(Aminomethyl)-3-isoxazolol	EHW	B
P008	4-Aminopyridine	EHW	B
U011	Amitrole	DW	D,+
P009	Ammonium picrate	EHW	R
P119	Ammonium vanadate	EHW	B
U012	Aniline	EHW	C,I
P010	Arsenic acid	EHW	B
P012	Arsenic (III) oxide	EHW	B,+
P011	Arsenic (V) oxide	EHW	B
P011	Arsenic pentoxide	EHW	B
P012	Arsenic trioxide	EHW	B,+
P038	Arsine, diethyl-	EHW	B
U014	Auramine	DW	+
U015	Azaserine	EHW	C,+
P054	Aziridine	EHW	B,+
U010	Azirino(2',3':3,4)pyrrolo(1,2a) indole-4,7-dione,6-amino-8 ((amino- carbonyl)oxy)methyl-1,1a,2,8,8a,8b- hexahydro-8a-methoxy-5 methyl-	EHW	B,+
P013	Barium cyanide	EHW	A
U157	Benz(j)aceanthrylene,1,2-dihydro- 3-methyl	EHW	H,P

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<u>DANGEROUS WASTE NUMBER</u>	<u>SUBSTANCE</u>	<u>ECOLOGY HAZARD DESIGNATION</u>	<u>REASON* FOR DESIGNATION</u>
U016	Benz(c)acridine	DW	+
U016	3,4-Benzacridine	DW	+
U017	Benzal chloride	EHW	D,H
U018	Benz(a)anthracene	EHW	P,+
U018	1,2-Benzanthracene	EHW	P,+
U094	1,2-Benzanthracene,7,12-dimethyl	EHW	C,P
U012	Benzenamine	EHW	C,I
U014	Benzenamine,4,4'-carbonimidoylbis (N,N-dimethyl)-	DW	+
P024	Benezenamine,4-chloro-	EHW	C,H
U049	Benzenamine,4-chloro-2-methyl- hydrochloride	EHW	H
U093	Benzenamine,N,N-dimethyl-4- (phenylazo)-	EHW	+
U158	Benzenamine,4,4'-methylenebis (2-chloro)-	EHW	H,+
U222	Benzenamine,2-methyl-,hydrochloride	DW	D,+
U181	Benzenamine,2-methyl-5-nitro	DW	D
P077	Benzenamine, 4-nitro-	EHW	D,?
U019	Benzene	EHW	C,+,I
U038	Benzeneacetic acid, 4-chloro-alpha- (4-chlorophenyl)-alpha-hydroxy, ethyl ester	EHW	H
U030	Benzene, 1-bromo-4-phenoxy-	EHW	H
U037	Benzene, chloro-	EHW	B,H,I
P028	Benzene, (chloromethyl)-	EHW	B,H,+
U190	1,2,Benzenedicarboxylic acid anhydride	EHW	C
U028	1,2,Benzenedicarboxylic acid, bis(2-ethyl-hexyl) ester	DW	?
U069	1,2-Benzenedicarboxylic acid, dibutyl ester	DW	D

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U088	1,2-Benzenedicarboxylic acid, diethyl ester	DW	?
U102	1,2-Benzenedicarboxylic acid, dimethyl ester	DW	?
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester	DW	?
U070	Benzene, 1,2-dichloro-	EHW	B,H
U071	Benzene, 1,3-dichloro-	EHW	B,H
U072	Benzene, 1,4-dichloro-	EHW	B,H
U017	Benzene, (dichloromethyl)-	EHW	D,H
U223	Benzene, 1,3-diisocyanatomethyl-	EHW	B,R
U239	Benzene, dimethyl-	EHW	C,I
U201	1,3-Benzenediol	EHW	C
P042	1,2-Benzenediol, 4- 1-hydroxy-2- (methyl-amino)ethyl -	EHW	B
U127	Benzene, hexachloro-	EHW	H
U056	Benzene, hexahydro-	EHW	C,I
U188	Benzene, hydroxy-	EHW	C
U220	Benzene, methyl-	EHW	C,I
U105	Benzene, 1-methyl-2,4-dinitro-	EHW	C
U106	Benzene, 1-methyl-2,6-dinitro-	EHW	C
U203	Benzene, 1,2-methylenedioxy-4-allyl-	DW	D,+
U141	Benzene, 1,2-methylenedioxy-4-propenyl-	DW	D,+
U090	Benzene, 1,2-methylenedioxy-4-propyl-	DW	D,+
U055	Benzene, (1-methylethyl)-	EHW	C,I
U169	Benzene, nitro-	EHW	C,I
U183	Benzene, pentachloro	EHW	H
U185	Benzene, pentachloronitro-	EHW	D,H,+
U020	Benzenesulfonic acid chloride	EHW	B,H,O,R
U020	Benzenesulfonyl chloride	EHW	B,H,O,R
U207	Benzene, 1,2,4,5-tetrachloro	EHW	D,H
P014	Benzenethiol	EHW	A

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U023	Benzene, (trichloromethyl)-	EHW	H,O,R
U234	Benzene, 1,3,5-trinitro-	DW	D,R
U021	Benzidine	EHW	B,+
U202	1,2-Benzisothiazolin-3-one, 1,1-dioxide, and salts	DW	+
U120	Benzo(j,k)fluorene	DW	D
U022	Benzo(a)pyrene	EHW	P,+
U022	3,4-Benzopyrene	EHW	P,+
U197	p-Benzoquinone	EHW	C
U023	Benzotrichloride	EHW	H,O,R
U050	1,2-Benzphenanthrene	EHW	P,+
P028	Benzyl chloride	EHW	B,H,+
P015	Beryllium dust	EHW	C,+
U085	2,2'-Bioxirane	EHW	B,I
U021	(1,1'-Biphenyl)-4,4'-diamine	EHW	B,+
U073	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-	EHW	H,+
U091	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-	DW	D,+
U095	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl	EHW	C,+
U024	Bis(2-chloroethoxy)methane	EHW	C,H
U027	Bis(2-chloroisopropyl)ether	EHW	C,H,O
P016	Bis(chloromethyl)ether	EHW	B,H,+
U244	Bis(dimethylthiocarbamoyl)disulfide	DW	D
U028	Bis(2-ethylhexyl)phthalate	DW	?
U246	Bromine cyanide	EHW	C,H
P017	Bromoacetone	EHW	C,H
U225	Bromoform	EHW	H
U030	4-Bromophenyl phenyl ether	EHW	H
P018	Brucine	EHW	A

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U128	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	EHW	H
U172	1-Butanamine, N-butyl, N-nitroso	DW	D, +
U035	Butanoic acid, 4-bis(2-chloroethyl) amino benzene	EHW	H, +
U031	1-Butanol	DW	D, I
U159	2-Butanone	DW	D, I
U160	2-Butanone peroxide	EHW	B, R
U053	2-Butenal	EHW	B, I
U074	2-Butene, 1,4-dichloro-	EHW	C, H, I
U031	n-Butyl alcohol	DW	D, I
U136	Cacodylic acid	DW	D
U032	Calcium chromate	EHW	C, +, EP
P021	Calcium cyanide	EHW	B
P123	Camphene, octachloro-	EHW	X, H
U238	Carbamic acid, ethyl ester	DW	+
U178	Carbamic acid, methylnitroso-, ethyl ester	EHW	C, +
U176	Carbamide, N-ethyl, -N-nitroso-	EHW	C, +
U177	Carbamide, N-methyl, -N-nitroso-	EHW	C, +
U219	Carbamide, thio-	EHW	C, +
P103	Carbamimidoseleonic acid	EHW	B
U097	Carbamoyl chloride, dimethyl-	EHW	D, H, +
P022	Carbon bisulfide	EHW	D, I, ?
P022	Carbon disulfide	EHW	D, I, ?
U215	Carbonic acid, dithallium (I) salt	DW	?
U156	Carbonochloridic acid, methyl ester	EHW	B, H, I
U033	Carbon oxyfluoride	EHW	B, H, R
U211	Carbon tetrachloride	EHW	C, H, +
P095	Carbonyl chloride	EHW	B, H
U033	Carbonyl fluoride	EHW	B, H, R
U035	Chlorambucil	EHW	H, +

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U036	Chlordane, technical	EHW	X,H
P033	Chlorine cyanide	EHW	A,H
U026	Chlornaphazine	EHW	H,+
P023	Chloroacetaldehyde	EHW	B,H
P024	p-Chloroaniline	EHW	C,H
U037	Chlorobenzene	EHW	B,H,I
U039	4-chloro-m-cresol	EHW	H
U041	1-Chloro-2,3-epoxy propane	EHW	C,H,+,I
U042	2-chloroethyl vinyl ether	EHW	C,H
U044	Chloroform	EHW	C,H,+
U046	Chloromethyl methyl ether	EHW	D,H,+,I
U047	beta-Chloronaphthalene	EHW	D,H
U048	o-Chlorophenol	EHW	D,H
P026	1-(o-chlorophenyl)thiourea	EHW	A,H
P027	3-Chloropropionitrile	EHW	B,H
U049	4-Chloro-o-toluidine, hydrochloride	EHW	H
U032	Chromic acid, calcium salt	EHW	C,+,EP
U050	Chrysene	EHW	P,+
P029	Copper cyanide	EHW	B
U051	Creosote	DW	D
U052	Cresols	EHW	B
U052	Cresylic acid	EHW	B
U053	Crotonaldehyde	EHW	B,I
U055	Cumene	EHW	C,I
P030	Cyanides (soluble cyanide salts), not elsewhere specified	EHW	A
P031	Cyanogen	EHW	B,I
U246	Cyanogen bromide	EHW	C,H
P033	Cyanogen chloride	EHW	A,H
U197	1,4-Cyclohexadienedione	EHW	C

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U056	Cyclohexane	EHW	C,I
U057	Cyclohexanone	EHW	C,I
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	EHW	X,H
U058	Cyclophosphamide	EHW	C,H,+,I
U240	2,4-D, salts and esters	EHW	B,H
U059	Daunomycin	DW	D,+
U060	DDD	EHW	C,H,+
U061	DDT	EHW	X,H,+
U142	Decachlorooctahydro-1,3,4-metheno- 2H-cyclobuta(c,d)-pentalen-2-one	EHW	X,H
U062	Diallate	EHW	C,H,+
U133	Diamine	EHW	B,+,R
U221	Diaminotoluene	DW	?
U063	Dibenz(a,h)anthracene	EHW	A,P,+
U063	1,2:5,6-Dibenzanthracene	EHW	A,P,+
U064	1,2:7,8-Dibenzopyrene	EHW	P,+
U064	Dibenz(a,i)pyrene	EHW	P,+
U066	1,2-Dibromo-3-chloropropane	EHW	C,H,+
U069	Dibutyl phthalate	DW	D
U062	S-(2,3-Dichloroallyl) diisopropyl- thiocarbamate	EHW	C,H,+
U070	o-Dichlorobenzene	EHW	B,H
U071	m-Dichlorobenzene	EHW	B,H
U072	p-Dichlorobenzene	EHW	B,H
U073	3,3'-Dichlorobenzidine	EHW	H,+
U074	1,4-Dichloro-2-butene	EHW	C,H,I
U075	Dichlorodifluoromethane	EHW	H
U192	3,5-Dichloro-N-(1,1-dimethyl-2- propynyl)benzamide	DW	?
U060	Dichlorodiphenyl dichloroethane	EHW	C,H,+

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U061	Dichlorodiphenyl trichloroethane	EHW	X,H,+
U078	1,1-Dichloroethylene	EHW	C,H,+
U079	1,2,-Dichloroethylene	EHW	D,H
U025	Dichloroethyl ether	EHW	C,H
U081	2,4-Dichlorophenol	EHW	D,H
U082	2,6-Dichlorophenol	EHW	D,H
U240	2,4-Dichlorophenoxyacetic acid, salts and esters	EHW	B,H
P036	Dichlorophenyl arsine	EHW	B,H
U083	1,2-Dichloropropane	EHW	C,H,I
U084	1,3-Dichloropropene	EHW	C,H
P037	Dieldrin	EHW	X,H,+
U085	1,2:3,4-Diepoxybutane	EHW	B,I
P038	Diethylarsine	EHW	B
U108	1,4-Diethylene dioxide	DW	D,+
P039	O,O,-Diethyl S- 2-(ethylthio)ethyl phosphorodithioate	EHW	A
U086	N,N,-Diethylhydrazine	DW	+
U087	O,O-Diethyl-S-methyl-dithiophosphate	EHW	B
P041	Diethyl-p-nitrophenyl phosphate	EHW	A
U088	Diethyl phthalate	DW	?
P040	O,O-Diethyl O-pyrazinyl phosphorothioate	EHW	A
U089	Diethylstilbestrol	DW	+
U148	1,2-Dihydro-3,-6-pyridazinedione	DW	D
U090	Dihydrosafrole	DW	D,+
P043	Diisopropyl fluorophosphate	EHW	B,H
P044	Dimethoate	EHW	A
U091	3,3'-Dimethoxybenzidine	DW	D,+
U092	Dimethylamine	EHW	C,I
U093	Dimethylaminoazobenzene	EHW	C,+

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U094	7,12-Dimethylbenz(a)anthracene	EHW	C,P
U095	3,3'-Dimethylbenzidine	EHW	C,+
U096	alpha,alpha-Dimethylbenzyl- hydroperoxide	EHW	C,R
U097	Dimethylcarbamoyl chloride	EHW	D,H,+
U098	1,1-Dimethylhydrazine	DW	+,I
U099	1,2-Dimethylhydrazine	EHW	C,+,I
P045	3,3-Dimethyl-1-(methylthio)-2- butanone,O- (methylamino)carbonyl oxime	EHW	B
P071	O,O-Dimethyl O-p-nitrophenyl phosphorothioate	EHW	A
P082	Dimethyl nitrosamine	EHW	B,+
P046	alpha,alpha-Dimethylpenethylamine	EHW	C
U101	2,4-Dimethylphenol	DW	D
U102	Dimethyl phthalate	DW	?
U103	Dimethyl sulfate	EHW	C,O,+
P047	4,6-Dinitro-o-cresol and salts	EHW	B
P034	4,6-Dinitro-o-cyclohexyl phenol	EHW	C
P048	2,4-Dinitrophenol	EHW	B
U105	2,4-Dinitrotoluene	EHW	C
U106	2,6-Dinitrotoluene	EHW	C
P020	Dinoseb	EHW	B
U107	Di-n-octyl phthalate	DW	?
U108	1,4-Dioxane	DW	D,+
U109	1,2-Diphenylhydrazine	EHW	C
P085	Diphosphoramidate, octamethyl	EHW	?
U110	Dipropylamine	EHW	C,I
U111	Di-n-propylnitrosamine	EHW	C,+
P039	Disulfoton	EHW	A
P049	2,4-Dithiobiuret	EHW	A

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P109	Dithiopyrophosphoric acid, tetraethyl ester	EHW	A
P050	Endosulfan	EHW	X,H
P088	Endothall	EHW	B
P051	Endrin	EHW	X,H
P042	Epinephrine	EHW	B
U001	Ethanal	EHW	C
U174	Ethanamine, N-ethyl-N-nitroso-	EHW	C,+
P046	Ethanamine, 1,1-dimethyl-2-phenyl-	EHW	C
U042	Ethane, 2-chloroethoxy	EHW	C,H
U067	Ethane, 1,2-dibromo-	EHW	C,H,+
U076	Ethane, 1,1-dichloro-	EHW	D,H
U077	Ethane, 1,2-dichloro-	EHW	D,H
U114	1,2-Ethanedithiolbiscarbamodithioic acid	EHW	B
U131	Ethane, 1,1,1,2,2,2-hexachloro-	EHW	H
U024	Ethane, 1,1'-methylenebis(oxy) bis 2-chloro-	EHW	C,H
U003	Ethanenitrile	EHW	C
U117	Ethane, 1,1'-oxybis-	DW	D,I
U025	Ethane, 1,1'-oxybis 2-chloro-	EHW	C,H
U184	Ethane, pentachloro-	EHW	A,H
U208	Ethane, 1,1,1,2-tetrachloro-	EHW	H
U209	Ethane, 1,1,2,2-tetrachloro-	EHW	H
U218	Ethanethioamide	DW	+
U227	Ethane, 1,1,2-trichloro-	EHW	C,H
U247	Ethane, 1,1,1-trichloro-2,2- bis(p-methoxy phenyl)-	EHW	D,H
U173	Ethanol, 2,2-(nitrosoimino)bis-	DW	+
U004	Ethanone, 1-phenyl-	DW	D
U006	Ethanoyl chloride	EHW	C,H,O,R
P084	Ethenamine, N-methyl-N-nitroso-	EHW	B,+

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U043	Ethene, chloro-	EHW	D,H,+
U078	Ethene, 1,1-dichloro-	EHW	C,H,+
U079	Ethene, trans-1,2-dichloro	EHW	D,H
U210	Ethene, 1,1,2,2-tetrachloro	EHW	C,H
U359	2-Ethoxyethanol	DW	X,I
U112	Ethyl acetate	DW	D,I
U113	Ethyl acrylate	DW	D,I
U238	Ethyl carbamate (urethan)	DW	+
P101	Ethyl cyanide	EHW	B
U038	Ethyl 4,4'-dichlorobenzilate	EHW	D,H
U114	Ethylenebis(dithiocarbamic acid), salts and esters	EHW	B
U067	Ethylene dibromide	EHW	C,H
U077	Ethylene dichloride	EHW	D,H
U359	Ethylene glycol monoethyl ether	DW	X,I
U115	Ethylene oxide	EHW	C,I
U116	Ethylene thiourea	DW	D,+
P054	Ethylenimine	EHW	B,+
U117	Ethyl ether	DW	D,I
U076	Ethylidene dichloride	EHW	D,H
U118	Ethyl methacrylate	DW	I
U119	Ethyl methanesulfonate	DW	+
P097	Famphur	EHW	A
U139	Ferric dextran	DW	+
U120	Fluoranthene	DW	D
P056	Fluorine	EHW	B
P057	Fluoroacetamide	EHW	B,H
P058	Fluoroacetic acid, sodium salt	EHW	A,H

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U122	Formaldehyde	EHW	C
U123	Formic acid	DW	D,0
P065	Fulminic acid, mercury (II) salt	EHW	R,?
U124	Furan	DW	I
U125	2-Furancarboxaldehyde	EHW	C,I
U147	2,5-Furandione	EHW	C
U213	Furan, tetrahydro-	DW	I
U125	Furfural	EHW	C,I
U124	Furfuran	DW	I
U206	D-Glucopyranose, 2-deoxy-2(3-methyl-3-nitrosoureido)	DW	+
U126	Glycidylaldehyde	EHW	C,+
U163	Guanidine, N-nitroso-N-methyl-N'nitro-	EHW	C,+
P059	Heptachlor	EHW	X,H,+
U127	Hexachlorobenzene	EHW	H
U128	Hexachlorobutadiene	EHW	C,H
U129	Hexachlorocyclohexane (gamma isomer)	EHW	H,+
U130	Hexachlorocyclopentadiene	EHW	X,H
P051	1,2,3,4,10,10-Hexachloro-6,)-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo, endo-1,4:5,8-dimethanonaphthalene	EHW	X,H
P037	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo, exo-1,4:5,8-dimethanonaphthalene	EHW	X,H,+
U131	Hexachloroethane	EHW	H
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, endo-dimethanonaphthalene	EHW	B,H
P004	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, exo-dimethanonaphthalene	EHW	B,H

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P060	Hexachlorohexahydro-endo,endo-dimethanonaphthalene	EHW	B,H
U132	Hexachlorophene	EHW	C,H
U243	Hexachloropropene	EHW	H
P062	Hexaethyl tetraphosphate	EHW	B
U133	Hydrazine	EHW	B,+,R
P116	Hydrazinecarbothioamide	EHW	B
U086	Hydrazine, 1,2-diethyl-	DW	+
U098	Hydrazine, 1,1-dimethyl-	DW	+,I
U099	Hydrazine, 1,2-dimethyl-	EHW	C,+,I
U109	Hydrazine, 1,2-diphenyl	EHW	C
P068	Hydrazine, methyl-	EHW	A,I
P063	Hydrocyanic acid	EHW	A
U134	Hydrofluoric acid	DW	D,O
P063	Hydrogen cyanide	EHW	A
U134	Hydrogen fluoride	DW	D,O
P096	Hydrogen phosphide	EHW	B,I
U135	Hydrogen sulfide	EHW	B,I
U096	Hydroperoxide,1-methyl-1-phenylethyl-	EHW	C,R
U136	Hydroxydimethylarsine oxide	DW	D
U116	2-Imidazolidinethione	DW	D,+
U137	Indeno 1,2,3-cd pyrene	DW	+
U245	Indomethacin	EHW	B,H
U139	Iron dextran	DW	+
U140	Isobutyl alcohol	DW	D,I
P064	Isocyanic acid, methyl ester	EHW	I,?
U141	Isosafrole	DW	D,+
P007	3(2H)-Isoxazolone,5-(aminomethyl)-	EHW	B
U142	Kepone	EHW	X,H

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U143	Lasiocarpine	EHW	C,+
U144	Lead acetate	EHW	D,EP
U145	Lead phosphate	DW	+
U146	Lead subacetate	DW	+
U129	Lindane	EHW	H,+
U147	Maleic anhydride	EHW	C
U148	Maleic hydrazide	DW	D
U149	Malononitrile	EHW	C
U150	Melphalan	DW	+
U151	Mercury	EHW	EP
P092	Mercury, (aceto-O)phenyl-	EHW	B
P065	Mercury fulminate	EHW	R,?
U152	Methacrylonitrile	EHW	B,I
U092	Methanamine, N-methyl	EHW	C,I
U029	Methane, bromo-	EHW	H
U045	Methane, chloro-	EHW	H,I
U046	Methane, chloromethoxy-	EHW	D,H,+,I
U068	Methane, dibromo-	EHW	C,H,+
U080	Methane, dichloro-	EHW	C,H
U075	Methane, dichlorodifluoro-	EHW	H
U138	Methane, iodo-	EHW	H,+
P016	Methane, oxybis(chloro)-	EHW	B,H,+
U119	Methanesulfonic acid, ethyl ester	DW	+
U211	Methane, tetrachloro-	EHW	C,H,+
P112	Methane, tetranitro-	EHW	A,R
U153	Methanethiol	EHW	B,I
P118	Methanethiol, trichloro-	EHW	H
U225	Methane, tribromo-	EHW	H
U044	Methane, trichloro-	EHW	C,H,+
U121	Methane, trichlorofluoro-	EHW	H

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U123	Methanoic acid	DW	D,O
U036	4,7-Methanoindan,1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-	EHW	X,H
P059	4,7-Methano-1H-indene,1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro	EHW	X,H,+
U154	Methanol	DW	D,I
U155	Methapyrilene	DW	D
P066	Methomyl	EHW	B
U154	Methyl alcohol	DW	D,I
P067	2-Methylaziridine	EHW	B,+,I
U029	Methyl bromide	EHW	H
U186	1-Methylbutadiene	DW	D,I
U045	Methyl chloride	EHW	H,I
U156	Methyl chlorocarbonate	EHW	B,H,I
U226	Methyl chloroform	EHW	C,H
U157	3-Methyl cholanthrene	EHW	H,P
U158	4,4'-Methylenebis(2-chloroaniline)	EHW	H,+
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)	EHW	C,H
U068	Methylene bromide	EHW	C,H,+
U030	Methylene chloride	EHW	C,H
U122	Methylene oxide	EHW	C
U159	Methyl ethyl ketone	DW	D,I
U160	Methyl ethyl ketone peroxide	EHW	B,R
P068	Methyl hydrazine	EHW	A,I
U138	Methyl iodide	EHW	H,+
U161	Methyl isobutyl ketone	DW	D,I
P064	Methyl isocyanate	EHW	I,?
P069	Methyl lactonitrile	EHW	A
U162	Methyl methacrylate	DW	C,I

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U163	N-methyl-N'-nitro-N-nitrosoguanidine	EHW	C,+,R
P071	Methyl parathion	EHW	A
U161	4-Methyl-2-pentanone	DW	+
U164	Methylthiouracil	DW	+
U010	Mitomycin C	EHW	B,+
U059	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10-(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy -7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-	DW	+
U165	Naphthalene	EHW	B
U047	Naphthalene, 2-chloro-	EHW	D,H
U166	1,4-Naphthalenedione	EHW	C
U236	2,7-Naphthalenedisulfonic acid, 3,3'-(3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl)-bis(azo)bis(5-amino-4-hydroxy)-, tetrasodium salt	EHW	H,+
U166	1,4-Naphthaquinone	EHW	C
U167	1-Naphthylamine	EHW	B,+
U168	2-Naphthylamine	EHW	B,+
U167	alpha-Naphthylamine	EHW	B,+
U168	beta-Naphthylamine	EHW	B,+
U026	2-Naphthylamine, N,N'-bis(2-chloromethyl)-	EHW	H,+
P072	alpha-Naphthylthiourea	EHW	B
P073	Nickel carbonyl	EHW	B
P074	Nickel cyanide	EHW	D,R,?
P074	Nickel (II) cyanide	EHW	D,R,?
P073	Nickel tetracarbonyl	EHW	B
P075	Nicotine and salts	EHW	B
P076	Nitric oxide	EHW	B
P077	p-Nitroaniline	EHW	D,?
U169	Nitrobenzene	EHW	C,I

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P078	Nitrogen dioxide	EHW	A
P076	Nitrogen (II) oxide	EHW	B
P078	Nitrogen (IV) oxide	EHW	A
P081	Nitroglycerine	EHW	R,?
U170	p-Nitrophenol	EHW	C
U171	2-Nitropropane	EHW	C,I
U172	N-Nitrosodi-n-butylamine	DW	D,+
U173	N-Nitrosodiethanolamine	DW	+
U174	N-Nitrosodiethylamine	EHW	C,+
P082	N-Nitrosodimethylamine	EHW	B,+
U176	N-Nitroso-N-ethylurea	EHW	C,+
U177	N-Nitroso-N-methylurea	EHW	C,+
U178	N-Nitroso-N-methylurethane	EHW	C,+
P084	N-Nitrosomethylvinylamine	EHW	B,+
U179	N-Nitrosopiperidine	EHW	C,+
U111	N-Nitroso-N-propylamine	EHW	C,+
U180	N-Nitrosopyrrolidine	DW	D,+
U181	5-Nitro-o-toluidine	DW	D
P050	5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite	EHW	X,H
P085	Octamethylpyrophosphoramidate	EHW	A
P087	Osmium oxide	EHW	B
P087	Osmium tetroxide	EHW	B
P088	7-Oxabicyclo 2,2,1 heptane-2,3- dicarboxylic acid	EHW	B
U193	1,2-Oxathiolane,2,2-dioxide	DW	+
U058	2H-1,3,2- Oxazaphosphorine,2- bis(2- chloroethyl)amino tetrahydro-2-oxide	EHW	C,H,I,+
U115	Oxirane	EHW	C,I
U041	Oxirane, 2-(chloromethyl)-	EHW	C,H,+,I

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U182	Paraldehyde	DW	D, I
P089	Parathion	EHW	X
U183	Pentachlorobenzene	EHW	H
U184	Pentachloroethane	EHW	A, H
U185	Pentachloronitrobenzene	EHW	D, H, +
U242	Pentachlorophenol	EHW	A, H
Also see F027			
U186	Pentadiene	DW	D, I
U187	Phenacetin	DW	D, +
U188	Phenol	EHW	C
U048	Phenol, 2-chloro-	EHW	D, H
U039	Phenol, 4-chloro-3-methyl	EHW	H
P034	Phenol, 2-cyclohexyl-4,6-dinitro-	EHW	C
U081	Phenol, 2,4-dichloro-	EHW	D, H
U082	Phenol, 2,6-dichloro-	EHW	D, H
U101	Phenol, 2,4-dimethyl-	DW	D
P048	Phenol, 2,4-dinitro-	EHW	B
P047	Phenol, 2,4-dinitro-6-methyl-, and salts	EHW	B
P020	Phenol, 2,4-dinitro-6-(1-methylpropyl)-	EHW	B
U170	Phenol, 4-nitro	EHW	C
U242	Phenol, pentachloro-	EHW	A, H
Also see F027			
U212	Phenol, 2,3,4,6-tetrachloro	EHW	C, H
Also see F027			
U230	Phenol, 2,4,5-trichloro-	EHW	A, H
Also see F027			
U231	Phenol, 2,4,6-trichloro-	EHW	A, H
Also see F027			
P009	Phenol, 2,4,6-trinitro-, ammonium salt	EHW	R
P036	Phenyl dichloroarsine	EHW	B, H

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DISCARDED CHEMICAL PRODUCTS LIST

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HAZARDOUS WASTE NUMBER	SUBSTANCE	ECOLOGY HAZARD DESIGNATION	REASON* FOR DESIGNATION
U137	1,10-(1,2-phenylene)pyrene	DW	+
P092	Phenylmercuric acetate	EHW	B
P093	N-phenylthiourea	EHW	A
P094	Phorate	EHW	X
P095	Phosgene	EHW	B,H
P096	Phosphine	EHW	B,I
P041	Phosphoric acid, diethyl p-nitrophenyl ester	EHW	A
U145	Phosphoric acid, lead salt	DW	+
U087	Phosphorodithioic acid, O,O-diethyl-, S-methyl ester	DW	?
P044	Phosphorodithioic acid, O,O-dimethyl-S- 2-(methylamino)-2-oxoethyl ester	EHW	A
P043	Phosphorofluoridic acid, bis(1-methyl-ethyl)-ester	EHW	B,H
P094	Phosphorothioic acid, O,O-diethyl-S-(ethylthio)methyl ester	EHW	X
P089	Phosphorothioic acid, O,O-diethyl-O-(p-nitrophenyl)ester	EHW	X
P040	Phosphorothioic acid, O,O-diethyl-O-pyrazinyl ester	EHW	A
P097	Phosphorothioic acid, O,O-dimethyl-O- p-((dimethylamino)sulfonyl) phenyl ester	EHW	A
U189	Phosphorous sulfide	EHW	B,I,R
U190	Phthalic anhydride	EHW	C
U191	2-Picoline	EHW	C
P110	Plumbane, tetraethyl-	EHW	A
P098	Potassium cyanide	EHW	A

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<u>DANGEROUS WASTE NUMBER</u>	<u>SUBSTANCE</u>	<u>ECOLOGY HAZARD DESIGNATION</u>	<u>REASON* FOR DESIGNATION</u>
P099	Potassium silver cyanide	EHW	A
U192	Pronamide	DW	?
P070	Propanal, 2-methyl-2(methylthio)- O- (methylamino)carbonyl oxime	EHW	B
U194	1-Propanamine	EHW	C, I
U110	1-Propanamine, N-propyl-	EHW	C, I
U066	Propane, 1,2-dibromo-3-chloro	EHW	C, H, +
U149	Propanedinitrile	EHW	C
P101	Propanenitrile	EHW	B
P027	Propanenitrile, 3-chloro-	EHW	B, H
P069	Propanenitrile, 2-hydroxy-2-methyl-	EHW	A
U171	Propane, 2-nitro	EHW	C, I
U027	Propane, 2,2'-oxybis 2-chloro-	EHW	C, H, O
U193	1,3-Propane sultone	DW	+
P081	Propanetriol, trinitrate-	EHW	R, ?
U235	1-Propanol, 2,3-dibromo-, phosphate(3:1)	EHW	D, H
U126	1-Propanol, 2,3-epoxy	EHW	C, +
U140	1-Propanol, 2-methyl-	DW	D, I
U002	2-Propanone	DW	D, I
P017	2-Propanone, 1-bromo	EHW	C, H
P102	Propargyl alcohol	EHW	X
P003	2-Propenal	EHW	X
U007	2-Propenamide	EHW	C
U084	Propene, 1,3-dichloro	EHW	C, H
U243	1-Propene, 1,1,2,3,3,3-hexachloro	EHW	H
U009	2-Propenenitrile	EHW	C, +, I
U152	2-Propenenitrile, 2-methyl-	EHW	B, I
U008	2-Propenoic acid	EHW	C, O, I
U113	2-Propenoic acid, ethyl ester	DW	C, I
U118	2-Propenoic acid, 2-methyl-, ethyl ester	DW	I

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<u>DANGEROUS WASTE NUMBER</u>	<u>SUBSTANCE</u>	<u>ECOLOGY HAZARD DESIGNATION</u>	<u>REASON* FOR DESIGNATION</u>
U162	2-Propenoic acid, 2-methyl-, methyl ester	DW	D,I
P005	2-Propen-1-ol	EHW	B,I
U233 Also see F027	Propionic acid, 2-(2,4,5 trichlorophenoxy)-	EHW	B,H
U194	n-Propylamine	EHW	C,I
U083	Propylene dichloride	EHW	C,H,I
P067	1,2-Propylenimine	EHW	B,+,I
P102	2-Propyn-1-ol	EHW	X
P008	Pyridinamine	EHW	B
U196	Pyridine	EHW	C,I
U155	Pyridine, 2- (2-dimethylamino)-2-thenylamino -	DW	D
U179	Pyridine, hexahydro-N-nitroso-	EHW	C,+
U191	Pyridine, 2-methyl-	EHW	C
P075	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts	EHW	B
U164	4(1H)-Pyrimidinone, 2,3, dihydro-6-methyl-2-thioxo-	DW	+
P111	Pyrophosphoric acid, tetraethyl ester	EHW	A
U180	Pyrrole, tetrahydro-N-nitroso-	DW	D,+
U200	Reserpine	DW	?
U201	Resorcinol	EHW	C
U202	Saccharin and salts	DW	+
U203	Safrole	DW	D,+
U204	Selenious acid	DW	O
U204	Selenium dioxide	DW	O
U205	Selenium disulfide	DW	R
P103	Selenourea	EHW	B

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DISCARDED CHEMICAL PRODUCTS LIST

DANGEROUS WASTE NUMBER	SUBSTANCE	ECOLOGY HAZARD DESIGNATION	REASON* FOR DESIGNATION
U015	L-Serine, diazoacetate (ester)	EHW	C, +
P104*	Silver cyanide	EHW	C
U233	Silvex	EHW	B, H
Also see F027			
P105	Sodium azide	EHW	A
P106	Sodium cyanide	EHW	A
U089	Stilbenediol, alpha, alpha'-diethyl-	DW	+
U206	Streptozotocin	DW	+
P107	Strontium sulfide	EHW	R
P108	Strychnidin-10-one, and salts	EHW	B
P018	Strychnidin-10-one, 2,3-dimethoxy	EHW	A
P108	Strychnine and salts	EHW	B
U135	Sulfur hydride	EHW	B, I
U103	Sulfuric acid, dimethyl ester	EHW	C, O, +
P115	Sulfuric acid, thallium (I) salt	EHW	B
U189	Sulfur phosphide	EHW	B, I, R
U205	Sulfur selenide	DW	R
U232	2,4,5-T	EHW	B, H, +
Also see F027			
U207	1,2,4,5-Tetrachlorobenzene	EHW	D, H
Also see F027			
U208	1,1,1,2-Tetrachloroethane	EHW	H
U209	1,1,2,2-Tetrachloroethane	EHW	H
U210	Tetrachloroethylene	EHW	C, H, +
U212	2,3,4,6-Tetrachlorophenol	EHW	C, H
P109	Tetraethyldithiopyrophosphate	EHW	A
P110	Tetraethyl lead	EHW	A
P111	Tetraethyl pyrophosphate	EHW	A
U213	Tetrahydrofuran	DW	I
P112	Tetranitromethane	EHW	A, R
P062	Tetraphosphoric acid, hexaethyl ester	EHW	B

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WASTE
NUMBER

SUBSTANCE

ECOLOGY
HAZARD
DESIGNATIONREASON* FOR
DESIGNATION

P113	Thallic oxide	EHW	B
U214	Thallium (I) acetate	DW	?
U215	Thallium (I) carbonate	DW	?
U216	Thallium (I) chloride	DW	?
U217	Thallium (I) nitrate	DW	?
P113	Thallium (III) oxide	EHW	B
P114	Thallium (I) selenide	EHW	C
P115	Thallium (I) sulfate	EHW	B
U218	Thioacetamide	DW	+
P045	Thiofanox	EHW	B
P049	Thioimidodicarbonic diamide	EHW	A
U153	Thiomethanol	EHW	B, I
P014	Thiophenol	EHW	A
P116	Thiosemicarbazide	EHW	B, H, +
U219	Thiourea	EHW	C, +
P026	Thiourea, (2-chlorophenyl)-	EHW	A, H
P072	Thiourea, 1-naphthalenyl-	EHW	B
P093	Thiourea, phenyl-	EHW	A
U244	Thiram	DW	D
U220	Toluene	EHW	C, I
U221	Toluenediamine	DW	?
U223	Toluene diisocyanate	EHW	B, R
U328	o-Toluidine	DW	D, +
U353	p-Toluidine	DW	D
U222	O-Toluidine hydrochloride	DW	D, +
P123	Toxaphene	EHW	X, H
U011	1H-1,2,4-Triazol-3-amine	DW	D, +
U226	1,1,1-Trichloroethane	EHW	C, H
U227	1,1,2-Trichloroethane	EHW	C, H
U228	Trichloroethene	EHW	C, H, +

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DANGEROUS
WASTE
NUMBER

SUBSTANCE

ECOLOGY
HAZARD
DESIGNATIONREASON* FOR
DESIGNATION

U228	Trichloroethylene	EHW	C,H,+
P118	Trichloromethanethiol	EHW	H
U121	Trichloromonofluoromethane	EHW	H
U230 See also F027	2,4,5-Trichlorophenol	EHW	A,H
U231 See also F027	2,4,6-Trichlorophenol	EHW	A,H
U232 See also F027	2,4,5-Trichlorophenoxyacetic acid	EHW	B,H,+
U233	2,4,5-Trichlorophenoxy propionic acid salts and esters	EHW	B,H,+
U234	sym-Trinitrobenzene	DW	D,R
U182	1,3,5-Trioxane, 2,4,5-trimethyl-	DW	D,I
U235	Tris(2,3-dibromopropyl) phosphate	EHW	D,H
U236	Trypan blue	EHW	H,+
U237	Uracil, 5-bis(2-chloromethyl)amino -	EHW	B,H,+
U237	Uracil mustard	EHW	B,H,+
P119	Vanadic acid, ammonium salt	EHW	B
P120	Vanadium pentoxide	EHW	B
P120	Vanadium (V) oxide	EHW	B
U043	Vinyl chloride	EHW	D,H,+
P001	Warfarin	EHW	A
U239	Xylene	EHW	C,I
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-(3,4,5-trimethoxybenzoyl)oxy -, methyl ester	DW	?
P121	Zinc cyanide	EHW	C
P122	Zinc phosphide	EHW	B,R

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DISCARDED CHEMICAL PRODUCTS LIST

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*Reasons for Designation

X = Toxic, Category X

A = Toxic, Category A

B = Toxic, Category B

C = Toxic, Category C

D = Toxic, Category D

H = Persistent, Halogenated Hydrocarbon

O = Corrosive

P = Persistent, Polycyclic Aromatic Hydrocarbon

+ = IARC Animal or Human, Positive or Suspected Carcinogen

I = Ignitable

R = Reactive

EP = Extraction Procedure Toxicity

? = Unknown (Ecology was unable to determine the reason(s)
for EPA's designation)

"Acutely Hazardous" discarded chemical products are those with dangerous waste numbers beginning with a "P" or those that show "X" or an "A" in the reason for designation column. The "Moderately Dangerous Products" are all DW; the "Acutely Dangerous Products" are all EHW.

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DANGEROUS WASTE SOURCES LIST

Effective Date

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APPENDIX C. DANGEROUS WASTE SOURCES LIST

(WAC 173-303-9904)

Amended January 1989

DANGEROUS
WASTE NUMBER

NONSPECIFIC SOURCES

Generic:

F001

The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; and sludges from the recovery of these solvents in degreasing operations.

F002

The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, and trichlorofluoromethane, 1,1,2-trichloro-ethane; and the still bottoms from the recovery of these solvents.

F003

The following spent nonhalogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; and the still bottoms from the recovery of these solvents.

F004

The following spent nonhalogenated solvents: Cresols and cresylic acid, nitrobenzene; and the still bottoms from the recovery of these solvents.

F005

The following spent nonhalogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, 2-nitropropane; and the still bottoms from the recovery of these solvents.

F027

Discarded unused formulations containing tri-, tetra- or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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DANGEROUS WASTE SOURCES LIST

Effective Date December 20, 1989

DANGEROUS
WASTE NUMBER

Generic:

STATE SOURCES

W001

The following wastes generated from the salvaging, rebuilding, or discarding of transformers or capacitors which contain polychlorinated biphenyls (PCB): Cooling and insulating fluids; cores, including core papers, from unrinsed transformers and capacitors; transformers and capacitors which will no longer be used for their intended use, except for those transformers or capacitors which have been rinsed; and rinsate from the rinsing of transformers and capacitors.

For the purposes of this listing, the rinsing of PCB-containing items shall be conducted as follows: 1) the item is drained of all free flowing liquid; 2) the item is filled with solvent and allowed to stand for at least 18 hours; 3) the item is drained thoroughly and the solvent is collected. Solvents may include kerosene, xylene, toluene and other solvents in which PCB's are readily soluble.

NOTE: Certain PCB wastes are excluded from this listing under WAC 173-303-071(3)(k). The generator should check that section to determine if his/her PCB waste is excluded from the requirements of WAC 173-303.

~~*Some wastes contain or may contain halogenated hydrocarbons. Although WAC 173-303-082 states that these wastes are DW, WAC 173-303-070(5), special knowledge, requires generators who know that their waste contains greater than one percent of these listed halogenated hydrocarbons to designate their waste EHW.~~

NOTE: The above list contains only those numbers normally expected to apply to Hanford waste sources. Because the list is incomplete and because regulations change, always call SHWES for waste numbers and designation.

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RADIATION RELEASE AUTHORIZATIONS

Effective Date December 20, 1989

APPENDIX D. RADIATION RELEASE AUTHORIZATIONS.

Westinghouse
Hanford CompanyInternal
Memo

From: Health Physics
 Phone: 3-1996 R3-12
 Date: November 10, 1989
 Subject: EXEMPTIONS FROM RADIATION PROTECTION RELEASE SURVEYS

33100-89-109

To: All Managers and Supervisors

cc: REH:MEH/ENK File/LB

References: (1) WHC-CM-4-10 Section 9.0, "Exemption From Radiological Survey."

(2) WHC-CM-2-2, ESSP Section, "Excess Property Disposal."

The facilities listed in Attachment 1 have been identified as exempt from radiological release survey requirements. This exemption allows equipment, material and property to be released from these facilities for uncontrolled use without a release survey, provided the following criteria and procedures are complied with:

1. The "Owner/Shipper" can and will certify that the material, equipment or property to be released is not radioactive, does not contain radioactive material and has never been in contact with or exposed to radioactive material. On this basis, it is assumed to be free of contamination. The "Owner/Shipper" prepared to make this certification documents the contamination-free status of the property by:

- a. Signing in the "RM Clearance for Public Sale" block,
- b. Entering "Not Required" in the RM Survey Number space, and
- c. Entering the statement "Certified Free of Contamination" on the shipping/release forms

See attachment 2.

NOTE: WHEN HISTORICAL STATUS IS UNCERTAIN, AN RPT RELEASE SURVEY IS ALWAYS REQUIRED.

2. The "Owner/Shipper" shall then contact an "APPROVER" for the appropriate area (Attachment 3) by telephone and request concurrence. It is the Approver's responsibility to ensure that the "Owner/Shipper" has thoroughly considered the nature of the materials and their potential for contamination. If the Approver concurs with certification, the "Owner/Shipper" places the approver's initials on the documents as shown on the examples. (Attachment 3)

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All Managers and Supervisors-

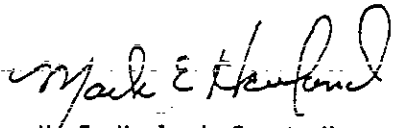
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Once the above steps are completed WHC, Transportation will pick up material and equipment from the listed facilities for uncontrolled distribution. They do, however, retain the right to request a radiological survey of anything that looks out of the ordinary or suspicious prior to handling it or transporting it. Health Physics will continue to perform intermittent surveys of exempt facilities, materials, equipment and property as a part of the Routine Survey Program.

Any building change of status must be identified and submitted promptly to Health Physics so that Attachment 1 can be maintained current. As a minimum, both attachments will be reviewed annually for additions and deletions and reissued.


M. E. Hevland, Deputy Manager
Health Physics

rkp

Attachments 3

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RADIATION RELEASE AUTHORIZATIONS

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ATTACHMENT 1

FACILITIES WHERE UNCONDITIONAL RELEASE SURVEY
IS NOT REQUIRED100 Areas Facilities and Trailers

181-B	1117-N	1149-N	MO-920
181-D	1118-N	1150-N	JAJ-3
182-B	1120-N	1151-N	JAJ-324-8
182-D	1123-N	1152-N	JAJ-N-13
183-D	1124-N	1153-N	1512-N
1720-K	1125-N	1154-N	1513-N
1100-N	1132-N	1155-N	1514-N
1101-N	1133-N	1156-N	1515-N
1102-N	1134-N	1158-N	1516-N
1103-N	1135-N	1159-N	JAJ-5345
1104-N	1142-N	1160-N	JAJ-15003
1107-N	1144-N	1161-N	JAJ-15300
1109-N	1145-NA	1162-N	JAJ-15309
1110-N	1145-NB	1163-N	JAJ-15316
1111-N	1146-N		JAJ-15343
1112-N	1147-N		JAJ-15354
1113-N	1148-N	<u>Trailers</u>	JAJ-17524
1114-N		MO-200	JAJ-17525
1115-N		MO-314	JAJ-17531
1116-N		MO-911	Paint Shop
			Structural Analysis
			Mobile Unit

200 Areas Facilities

222-B	2701-WA	2750-E	MO-222
222-SA	2701-ZB	2751-E	MO-223
222-T	2703-E	2752-E	MO-234
222-U	2704-E	2753-E	MO-240
272-E	2704-S	<u>Trailers</u>	MO-321
272-W	2704-W	MO-015	MO-346
273-E	2709-W	MO-016	MO-381
273-W	2713-E	MO-017	MO-400
274-E	2715-E	MO-019	MO-405
274-W	2715-EA	MO-021	MO-407
275-E	2715-ED	MO-027	MO-419
275-EA	2715-W	MO-028	MO-909
275-W	2716-S	MO-031	MO-922
277-W	2719-EA	MO-032	MO-924
283-E	2719-W	MO-037	MO-931
283-W	2719-WA	MO-039	MO-934
284-E	2720-W	MO-042	MO-936
284-W	2721-EA	MO-043	MO-939
2101-M	2722-E	MO-047	MO-947
2701-A	2722-W	MO-056	MO-995
2400-E	2723-W	MO-104	MO-3204
2403-EA	2727-E	MO-201	
2701-EA	2728-W	MO-206	<u>Kaiser Trailers*</u>
2701-ED		MO-215	Includes entire
2701-EF		MO-221	Kaiser Trailer

Complex at 4th &
Baltimore in 200
East Area

300 Areas Facilities

305	3701-A	3707-C	3765
328	3701-D	3707-H	3766
335/336	3701-L	3709	3767
337	3701-R	3711	3768
337 High Bay	3701-S	3715	3769
338	3701-T	3717-B	3770
382	3701-U	3717-C	3790
384	3702	3718	<u>Trailers</u>
3506-A	3703	3718-N	323-2
3621-B	3705	3732-N	335-1
3621-C	3706	3732-S	340-1
3621-D	3707-A	3763	335-2
	3707-B	3764	

400 Area Facilities

401	4719	4734-D	<u>Trailers</u>
427	4721	4790	H-13
436	4722-B	4791-TC	H-14
451-A	4722-C	4802	H-15
451-B	4722-D	4813	H-16
4701-A	4726	4814	H-17
4701-B	4726-D	4831	H-27
4701-C	4732-A	4842-A	T-100
4702	4732-B	4843 Lay Down	T-101
4706	4732-C	Area	T-102
4707	4734-B	4862	T-104
4710	4734-C	N Dewar Pad	T-106
4713-B			T-109

500 Area

251 Substation Yakima Barricade
622-G Building Wye Barricade
622-R Building Battelle Observatory
Patrol Training Academy Facilities
Near Surface Test Site (Gable Mountain)
Exploratory Shaft Site (West of 200-W)
616 - Nonradiation/Nondangerous Waste
Storage Facility
609 & 609A Fire Stations

1100 Area

PSL-1120	1170	1100 Jadwin
1163	1171 Offices	1135 Jadwin
1166	Sky Park	TCPC
1167	HAPD	

700 and 3000 Areas

All 700 Area Facilities
All 3000 Area Facilities: except PSL,
LSL-2, EDL and RTL.

NAME OF CONTRACTOR				CONTROL NO.		
PROPERTY DISPOSAL REQUEST (SEE INSTRUCTIONS ON LAST PAGE)				ACCOUNTING REVIEW BY		
PART I — DESCRIPTION OF PROPERTY AND REASON FOR DISPOSAL						
ITEM NO.	QTY.	UNIT	INCLUDE IDENTIFICATION NUMBERS, SUCH AS: NEW, EQUIPMENT, PIECE, SERIAL NOS., BUILDING FROM WHICH REMOVED, PROJECT AFFECTED, ETC.	UNIT ACQ. VALUE	ACCOUNTING USE ONLY TOTAL VALUE	PROPERTY MGT. USE ONLY DISPOSE OF AS
*EXAMPLE						
* DISPOSITION SYMBOLS: 1. — HAZARDOUS 2. — SALVAGE 3. — SCRAP 4. — BURY 5. — DESTROY 6. — OTHER (EXPLAIN)						
REASON FOR DISPOSAL: (IF CONTAMINATED ATTACH RADIATION SURVEY REPORT.)						
*Certified Free of Contamination/Approver's Name or Initials						
THE PROPERTY LISTED ABOVE — <input type="checkbox"/> IS <input type="checkbox"/> IS NOT — TOXIC OR HAZARDOUS TO HUMANS, ANIMALS OR THE ENVIRONMENT.						
HAZARDOUS DISPOSAL INSTRUCTIONS INDUSTRIAL HYGIENE & SAFETY DATE						
COMPONENT			DATE	LOCATION OF MATERIAL		
ORIGINATOR			BUILDING	PHONE	LOCATION OF BURIAL	
RM CLEARANCE FOR PUBLIC SALE Shipper's Signature			SURVEY NO. *N.R.	DATE		
SIGNATURE OF REQUESTING AUTHORITY			OFFICE FURNITURE REVIEW BY (SEE EACH PAGE)			
PART II — INVESTIGATION			PART III — APPROVAL			
AN INVESTIGATION HAS BEEN MADE AND DISPOSITION INSTRUCTIONS HAVE BEEN NOTED IN PART I ABOVE.			DISPOSITION OF THE ABOVE PROPERTY OR MATERIALS IN ACCORDANCE WITH THE ABOVE RECOMMENDATIONS IS APPROVED.			
BY		DATE	SIGNATURE OF APPROVING OFFICIAL		DATE	
PART IV — DISPOSITION RECEIPT			PART V — INVENTORY CONTROL			
BY		DATE	IN THE CASE OF INVENTORY MATERIALS DESIGNATED BY ITEM NUMBER ABOVE ACCOUNT TO BE RELIEVED AND OFFSETTING ACCOUNT TO BE CHARGED.			
DISPOSED OF PER INSTRUCTIONS IN PART I BY		DATE	ITEM NO.	DEBIT ACCOUNT	CREDIT ACCOUNT	
NOTE: THE SIGNATURE FOR RM CLEARANCE AND THE SURVEY NUMBER MUST BE OBTAINED THE SAME DAY AS THE ARRIVAL OF THE PROPERTY AT THE STORES SALE YARD.						

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RADIATION RELEASE AUTHORIZATIONS

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Westinghouse
Hanford CompanyWestinghouse Hanford Company
A subsidiary of Westinghouse Electric
Corporation
P.O. Box 1570 Richland, Wa. 99352

RELEASE TO SHIP

31790

MO.	DAY	YR.
-----	-----	-----

DATE SHIPPED		
MO.	DAY	YR.

VENDOR CODE	PURCHASE ORDER REF.
-------------	---------------------

SHIP TO

FOR ACCOUNT OF

P.O.B.	CAR INITIALS AND NO.	PRY. ORGE. 1. VENDOR 2. WESTINGHOUSE HANFORD	BUYER CODE	BUYER NAME	PHONE
B/L	B/L WEIGHT	ROUTING	ACQUISITION NO.		

P/O ITEM	QUANTITY	U/M	DESCRIPTION	AMOUNT
<div data-bbox="521 1050 997 1377" data-label="Text">*EXAMPLE</div>				
*Certified Free of Contamination/Approver's Name or Initials				

REDISTRIBUTE COST ☐ YES ☐ NO SPECIAL PACKAGING REQUIRED ☐ YES ☐ NOREASON
FOR
SHIPMENT

- A. RETURN FOR CREDIT
B. RETURN FOR REPLACEMENT
C. RETURN FOR REPAIR
D. RETURN VENDOR-OWNED
RETURNABLE CONTAINER

- E. RETURN OVERSHIPPMENTS
F. RETURN SAMPLE
G. RETURN VENDOR-OWNED MATERIAL OR EQUIPMENT
H. SHIP GOVERNMENT-OWNED TOOLS, JIGS, AND FIXTURES
I. SHIP EXCHANGE UNITS (CORES)

- J. SHIP MATERIAL OR EQUIPMENT FOR REPAIR OR REBUILD
K. SHIP MATERIAL OR EQUIPMENT FOR REPAIR ESTIMATE
L. SHIP GOVERNMENT-OWNED RETURNABLE CONTAINER
M. SHIP GOVERNMENT-OWNED MATERIAL FOR USE IN FABRICATION
N. MISCELLANEOUS

HAZARDOUS MATERIAL ☐ YES ☐ NO; IF YES, HAZARDOUS MATERIAL FORM IS REQUIRED TO ACCOMPANY MATERIAL

LOCATION OF MATERIAL

AM CLEARANCE FOR PUBLIC SALE

SURVEY NO.

*N.B.

* Shipper's Signature

DATE

CUSTODIAN

PHONE

DATE AVAILABLE FOR SHIPMENT

ITEM	CO ID*	COST CENTER	MO	COST ELEMENT	CHARGE CODE	% OF COST	AUTHORIZED BY	DATE
							FOR DOE	DATE
							FOR SHIPPING OPERATION	DATE

54-7000-102 (7-87)

1

1-ACCOUNTS PAYABLE COPY 2-BUYER'S COPY 3-PROPERTY MANAGEMENT COPY 4-SHIPMENT COPY
5-PACKING LIST COPY 6-CUSTODIAN COPY 7-CUSTODIAN COPY 8-PURCHASING COPY

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RADIATION RELEASE AUTHORIZATIONS

CONTRACTOR	OFF - SITE PROPERTY CONTROL	SERIAL NUMBER (TO BE OBTAINED FROM PROPERTY ACCESSION)
------------	--------------------------------	---

PART I - TO BE COMPLETED BY ORIGINATOR

DEPARTMENT	SECTION	UNIT
THE FOLLOWING ITEMS ARE TO BE SHIPPED FROM <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> VENDOR		
ROUTING <input type="checkbox"/> PREPAID <input type="checkbox"/> COLLECT		
SHIPPED TO		OFFSITE CUSTODIAN
FULL TITLE		PHONE
QUANTITY	DESCRIPTION (INCLUDE SERIAL AND P.C.N. NO'S.)	ORIGINAL COST
*EXAMPLE		
<input type="checkbox"/> CLASSIFIED <input type="checkbox"/> UNCLASSIFIED <input type="checkbox"/> SHIPPED UNDER DOE CONTRACT <input type="checkbox"/> SHIPPED UNDER CONTRACTOR'S USE PERMIT CONTRACT		

NECESSITY FOR THE OFF-SITE USE OF THIS PROPERTY:

*Certified Free of Contamination/Approver's Name or Initials

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED
TO WESTINGHOUSE HANFORD OPERATIONS

PM CLEARANCE FOR PUBLIC RELEASE		AM SURVEY NO.	DATE
* Shipper's Signature		N.R.	
LOCATION OF PROPERTY (AREA & BLDG.)	CONTACT	PHONE	
DATE READY FOR SHIPMENT	COST CODE TO BE CHARGED	APPROXIMATE DATE THIS PROPERTY WILL BE RETURNED	
ORIGINATED BY	DATE	AUTHORIZED BY	DATE
SIGNATURE AND NAME OF PROPERTY CONTROL		CUSTODIAN DATE	PROPERTY MANAGEMENT APPROVAL DATE

PART II - TO BE COMPLETED BY WHC SHIPPING OPERATION

SIGNATURE OF THE PROPERTY	RETURN ORDER NO.	DATE ISSUED	HOUSEWARE ORDER NO.	DATE ISSUED
DATE				

DISTRIBUTION

BY ORIGINATOR WHITE - PROPERTY MANAGEMENT GREEN - RETAIN YELLOW - RETAIN PINK - RETAIN	WHC SHIPPING OPERATIONS - SIGN ALL COPIES AND FORWARD TO: WHITE - PROPERTY MANAGEMENT GREEN - PROPERTY CONTROL CUSTODIAN (ISSUING OFFICE) YELLOW - RETAIN PINK - ORIGINATOR
--	---

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ACCOUNTING

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PERSONS AUTHORIZED TO APPROVE THAT MATERIAL HAS NOT
BEEN IN A RADIATION AREA/FREE OF CONTAMINATION

November 10, 1989

COMPANY	NAME	RELEASE LIMITED TO SPECIFIC AREAS	AUTHORIZATION LIMITED TO
BCSR	MS Porter DE Brunson	300/700 Area	Store orders, credit, return material to Stores
	JW Crigler MC Perkins	2912-E, 200 East 100, 200, 1100, 3000 Areas and Fed. Bldg.	Recycled chemical solution Chemical waste disposal
DOE	GR Yesberger EA Erichsen	700 Area, 3763 Bldg.	Return of furniture and material to Stores
HEHF	GA Jones JT Funk NJ Williams	Fed. Bldg., HS-I, HS- II, 3706, 2719-EA, 2719-WA, 1100-N, 748, 747, 747-B, 4719-A	Release of materials, including materials slated for shipping and public sale
KEH	DJ Foust	100, 200, 300, 600, 3000 Areas	Release of materials, excess property disposal, including materials slated for shipping and public sale
PNL	WA Snyder	300 Area, 3760 Bldg.	Shipping orders, credit
WMC	JM Garcia M. Kaviani JB Levine RJ Thomas	100 Area	Release of materials, excess property disposal, including materials slated for shipping and public sale
	EJ Adams WT Frisbee GS Hauger SR Johnson PI Linn BH Lueck WC Mallory RJ Messmer LA Nelsen GJ Sliger MK Strankman	200 Areas	Release of materials, excess property disposal, including materials slated for shipping and public sale
	PS Barajas CL Caldwell RL Watts	300 Area	Release of materials, excess property disposal, including materials slated for shipping and public sale

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WJ Bair
PS Barajas
CL Caldwell
PR Prevo
RN Smith
RL Watts

400 Area

Release of materials, excess
property disposal, including
materials slated for shipping and
public sale

PS Barajas
CL Caldwell
RL Watts

3000 Area

Release of materials, excess
property disposal, including
materials slated for shipping and
public sale

RE Boykin
GB Carlson
AH Kranz
ML McCollum
JR Olson
WF Todish
JC Schmalling

Procurement and Materi-
als Management (700/
1100 Areas)

Vendor returns, 1100 and 700 Areas.
Stores property for disposal in
1100 and 700 Areas. Stores damaged
property to carriers as salvage.

DA Pearson

Office Services Dept. -
3206 Bldg.

Excess paper materials, return to
Stores

JC Stevens

Office Services Dept. -
712 Bldg.

Excess paper materials, return to
Stores

JJ Birden

Fed. Bldg., 700 Area,
703, 712 Bldg.

Excess/salvage disposal, return to
Stores

JL Burke

300/400 Areas

Excess/salvage disposal, return to
Stores

CE Cartwright

1100/3000 Areas

Excess/salvage disposal, return to
Stores

HC Humphrey
Jr.

2101 Bldg.

Excess/salvage disposal and return
to Stores

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PACKAGING SUPPLIES

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APPENDIX E. PACKAGING SUPPLIES.

The following information is provided to assist in ordering supplies most commonly needed for dangerous waste disposal.

ITEM	STOCK NUMBER
<u>Forms</u>	
Chemical Waste Disposal Request Form	A-6400-245 (5-87)
Submit printing orders for forms to: Doris Strain Westinghouse Forms Administration B1-03	
Uniform Hazardous Waste Manifest Form	N/A
To obtain this form, contact: Sara Storm Site Hazardous Waste Engineering Support R1-51 373-3402	

This form can also be ordered directly from Labelmaster.

Labels

DOT "CORROSIVE" labels	37-4300-250
DOT Hazards Labels (see list below)	N/A
Order directly from: Labelmaster (or equivalent) 5724 N. Pulaski Road Chicago, IL 60646 (1-800-621-5808)	

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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PACKAGING SUPPLIES

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ITEMSTOCK NUMBERLabels (continued)

FLAMMABLE SOLID (L-5)
 FLAMMABLE LIQUID (L-6)
 FLAMMABLE GAS (L-7)
 POISON (L-9)
 IRRITANT (L-12)
 CORROSIVE (L-13)
 DANGEROUS WHEN WET (L-23)

USEPA Hazardous Waste Sticker
 (partially preprinted)

37-4300-400
 (100 per package)

Marking Supplies

"Sharpie" Waterproof Black Pen
 (used for completing USEPA Hazardous
 Waste stickers)

53-6966-400
 (12 per box)

"Meanstreak" White Wax Pencil
 (used for marking drums)

53-5300-530
 (12 per box)

Packing Materials

Absorbent
 ("Kitty Litter" or "Sweeping Compound")

38-1310-100

Waste ContainersSample Containers

4-Ounce Bottle
 (narrow mouth, round amber glass
 with Teflon-lined brown phenolic cap)

57-0280-040

Foam Pack Shipper
 (will hold 4-ounce bottle)

51-9700-004

Mailing Sleeve
 (for 4-ounce foam pack shipper)

51-9700-006

HAZARDOUS WASTE MANAGEMENT**Manual****WHC-CN-5-16****Section****APPENDIX E, REV 1****Page****E-3 of E-4****PACKAGING SUPPLIES****Effective Date December 20, 1989**ITEMSTOCK NUMBERWaste Containers (continued)Boxes/Cubitainers

- DOT 12B Fiberboard Box (1-gallon capacity) 51-9700-001
- 5-Gallon Cubitainer (DOT 12P fiberboard box with DOT 2U polyethylene inner liner) 51-9700-005

Bungs and Bung Covers

- 2-inch diameter bung (nylon or polyester gasket) 51-9800-300
- 3/4-inch diameter steel bung (nylon or polyester gasket) 51-9800-375
- 2-inch diameter bung cover (plastic or metal) 51-9800-400
- 3/4-inch diameter bung cover (plastic or metal) 51-9800-475

Drums

- DOT 6D 55-Gallon Steel Drum (2SL polyethylene liner - closed head, black with top painted white) 51-9800-255
- DOT 17C 30-Gallon Steel Drum (closed head, top painted white) 51-9800-130
- DOT 17E 30-Gallon Steel Drum (closed head, black, top painted white) 51-9800-230
- DOT 17H 30-Gallon Steel Drum (open head) 42-2230-200
- DOT 34 5-Gallon Polyethylene Drum (closed head) 51-9800-005
- DOT 34 15-Gallon Polyethylene Drum (closed head) 51-9800-015

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ITEMSTOCK NUMBERWaste Containers (continued)

- DOT 34 30-Gallon Polyethylene Drum (closed head)	51-9800-030
- Paint Can (1-gallon)	42-1487-100

Returnable Containers

Nonradioactive empty containers bearing tags or stamps indicating a deposit of \$10.00 or more should be returned to Central Stores. Arrangements for pickup of returnable drums can be made through Stores Delivery, 376-6804.

The following drums are available from:

Mr. Jack Hogan
Westinghouse Plant Support Control Department
373-2899

When ordering, refer to the essential material number.

ESSENTIAL
MATERIAL NUMBER

DOT 17C 5-Gallon Drum	WHC-0097-0398-398-EA
DOT 17C 55-Gallon Drum	WHC-0097-0396-396-EA
DOT 17E 55-Gallon Drum	WHC-0097-0394-394-EA
DOT 17H 55-Gallon Drum	WHC-0097-0397-397-EA
DOT 17C 85-Gallon Drum	WHC-0097-0399-399-EA

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HANFORD SPILL TABLE

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APPENDIX F. HANFORD SPILL TABLE.

List of Reportable Quantities

This list is taken from the Federal Environmental Spill Table. It represents all of the chemical compounds which have been found in Hanford Discharges since 1985. The purpose of this list is to facilitate the determining of Reportable Quantities (RQs) in case of a spill. This is easier than looking through over 1400 chemicals on the main list, most of which would never be present.

In the case of the inorganics all compounds on the EPA Spill Table are listed. It will be necessary to determine which if any ions are actually present in case of a spill. Because regulations change it is still required that SHWES be contacted for confirmation of RQs when a spill occurs.

CAS HAZARDOUS SUBSTANCE	WASTE NUMBER	CERCLA NUMBER	SARA RQ	RQ	CLASS	TOXIC
1,1,1,2-TETRACHLOROETHANE	630206	U208	1		EHW	X
1,1,1-TRICHLOROETHANE	71556	U226	1000		EHW	C
1,1,2,2-TETRACHLOROETHANE	79345	U209	1		EHW	X
1,1,2-TRICHLOROETHANE	79005	U227	1		EHW	X
2-CHLORONAPHTHALENE	91587	U047	5000		EHW	D
2-PROPENOL	107028	P003	1		EHW	X
ACETIC ACID	64197		5000		DW	D
ACETONE	67641	U002	5000		DW	D
ACETOPHENONE	98862	U004	5000		DW	D
ALUMINUM PHOSPHATE	20659738			100	*	*
AMMONIA	7664417		100	100	EHW	B
AMMONIUM FLUORIDE	12125018		100		EHW	B
AMMONIUM BIFLUORIDE	1341497		100		EHW	B
AMMONIUM HYDROXIDE	1336216		1000		EHW	C
ANTIMONY	7440360		5000		DW	D
ANTIMONY A	1397940			1	*	*
ANTIMONY PENTACHLORIDE	7647189		1000		EHW	C
ANTIMONY PENTAFLUORIDE	7783702			1	*	*
ANTIMONY POTASSIUM TARTRATE	28300745		100		EHW	B
ANTIMONY TRIBROMIDE	7789619		1000		EHW	C
ANTIMONY TRICHLORIDE	10025919		1000		EHW	C
ANTIMONY TRIFLUORIDE	7783564		1000	1	EHW	C
ANTIMONY TRIOXIDE	1309644		1000		EHW	C

*This is a complete rewrite; therefore, no revision bars are used to indicate changes.

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HANFORD SPILL TABLE

CAS HAZARDOUS SUBSTANCE	WASTE NUMBER	CERCLA NUMBER	SARA RQ	RQ	CLASS	TOXIC
BARIUM		D005	1000		EHW	C
BARIUM CYANIDE	542621	P013	10		EHW	A
BENZENE	71432	U019	1000		EHW	C
BENZOIC ACID	65850		5000		DW	D
BERYLLIUM	7440417	P015	1		EHW	X
BERYLLIUM CHLORIDE	7787475		5000		DW	D
BERYLLIUM DUST	7440417	P015	1		EHW	X
BERYLLIUM FLUORIDE	7787497		5000		DW	D
BERYLLIUM NITRATE	13597994 778		5000		DW	D
BIS(2-ETHYLHEXY) PHTHALATE	117817	U028	1		EHW	X
CADMIUM CHLORIDE	10108642		100		EHW	B
CADMIUM	7440439		1		EHW	X
CADMIUM ACETATE	543908		100		EHW	B
CADMIUM BROMIDE	7789426		100		EHW	B
CADMIUM OXIDE	1306190			1	*	*
CADMIUM STEARATE	2223930			1	*	*
CALCIUM ARSENATE	7778441		1000	1000	EHW	C
CALCIUM ARSENITE	52740166		1000		EHW	C
CALCIUM CARBIDE	75207		10		EHW	A
CALCIUM CHROMATE	13765190	U032	1000		EHW	C
CALCIUM CYANIDE	592018	P021	10		EHW	A
CHLOROFORM	67663	U044	5000	5000	EHW	D
CHROMIC ACETATE	1066304		1000		EHW	C
CHROMIC ACID	11115745 773		1000		EHW	C
CHROMIC ACID, CALCIUM SALT	13765190	U032	1000		EHW	C
CHROMIC CHLORIDE	10025737			1	*	*
CHROMIC SULFATE	10101538		1000		EHW	C
CHROMIUM	7440473		1		EHW	X
CHROMOUS CHLORIDE	10049055		1000		EHW	C
COPPER CYANIDE	544923	P029	10		EHW	A
CUPRIC ACETATE	142712		100		EHW	B
CUPRIC ACETOARSENITE	12002038		100		EHW	B
CUPRIC CHLORIDE	7447394		10		EHW	A
CUPRIC NITRATE	3251230		100		EHW	B
CUPRIC OXALATE	5983663		100		EHW	B
CUPRIC SULFATE	7758987		10		EHW	A
CUPRIC SULFATE	10380297		100		EHW	B
AMMONIATED CUPRIC TARTRATE	815827		100		EHW	B
CYCLOHEXANE	110827	U056	1000		EHW	C
DIMETHYLNITROSAMINE	62759	P082	1		EHW	X
HYDRAZINE	302012	U133	1	1	EHW	X

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HANFORD SPILL TABLE

HAZARDOUS SUBSTANCE	CAS NUMBER	WASTE NUMBER	CERCLA RO	SARA RO	CLASS	TOXIC
HYDROCHLORIC ACID	7647010		5000		DW	D
HYDROCYANIC ACID	74908	P063	10	10	EHW	A
HYDROFLUORIC ACID	7664393	U134	100		DW	B
HYDROGEN CYANIDE	74908	P063	10		EHW	A
HYDROGEN FLUORIDE	7664393	U134	100	100	DW	B
ISOPHORONE	78591		5000		DW	D
LEAD		7439921		1		EHWX
LEAD ACETATE	301042	U144	5000		EHW	D
LEAD ARSENATE	7784409		5000		DW	D
LEAD CHLORIDE	7758954		100		EHW	B
LEAD FLUOBORATE	13814965		100		EHW	B
LEAD FLUORIDE	7783462		100		EHW	B
LEAD IODIDE	10101630		100		EHW	B
LEAD NITRATE	10099748		100		EHW	B
LEAD PHOSPHATE	7446277	U145	1		EHW	X
LEAD STEARATE	7428480		5000		DW	D
LEAD SUBACETATE	1335326	U146	1		EHW	X
LEAD SULFATE	15739807		100		EHW	B
LEAD SULFIDE	1314870		5000		DW	D
LEAD THIOCYANATE	592870		100		EHW	B
MERCURIC ACETATE	1600277			1	*	*
MERCURIC CHLORIDE	7487947			1	*	*
MERCURIC CYANIDE	592041		1		EHW	X
MERCURIC NITRATE	10045940		10		EHW	A
MERCURIC OXIDE	21908532			1	*	*
MERCURIC SULFATE	7783359		10		EHW	A
MERCURIC THIOCYANATE	592858		10		EHW	A
MERCUROUS NITRATE	10415755	778	10		EHW	A
MERCURY	7439976	U151	1		EHW	X
METHANOL	67561	U154	5000		DW	D
METHYLENE CHLORIDE	75092	U080	1000		EHW	C
METHYL ETHYL KETONE	78933	U159	5000		DW	D
METHYL ISOBUTYL KETONE	108101	U161	5000		DW	D
METHYL VINYL KETONE	78944			1	*	*
METHYLENE CHLORIDE	75092	U080	1000		EHW	C
NICKEL	7440020		1		EHW	X
NICKEL AMMONIUM SULFATE	15699180		5000		DW	D
NICKEL CARBONYL	13463393	P073	1	1	EHW	X
NICKEL CHLORIDE	771854937211		5000		DW	D
NICKEL CYANIDE	557197	P074	1		EHW	X
NICKEL HYDROXIDE	12054487		1000		EHW	C
NICKEL NITRATE	14216752		5000		DW	D
NICKEL SULFATE	7786814		5000		DW	D
NICKEL TETRACARBONYL	13463393	P073	1		EHW	X
NICKEL(II) CYANIDE	557197	P074	1		EHW	X

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HANFORD SPILL TABLE

HAZARDOUS SUBSTANCE	CAS NUMBER	WASTE NUMBER	CERCLA RQ	SARA RQ	CLASS	TOXIC
NITRIC ACID	7697372		1000	1000	EHW	C
NITRIC OXIDE	10102439	P076	10	10	EHW	A
NITROGEN DIOXIDE	101024401054	P078	10	10	EHW	A
PENTACHLOROPHENOL	87865	U242	10		EHW	A
PHENOL	108952	U188	1000	1000	EHW	C
PHOSPHORIC ACID	7664382		5000		EHW	D
POTASSIUM HYDROXIDE	1310583		1000		EHW	C
POTASSIUM PERMANGANATE	7722647		100		EHW	B
PYRIDINE	110861	U196	1000		EHW	C
SILVER CYANIDE	506649	P104	1		EHW	X
SILVER NITRATE	7761888		1		EHW	X
SILVER	7440224		1000		EHW	C
SODIUM	7440235		10		EHW	A
SODIUM ARSENATE	7631892		1000	1000	EHW	C
SODIUM ARSENITE	7784465		1000	1000	EHW	C
SODIUM AZIDE	26628228	P105	1000	1000	EHW	C
SODIUM BICHROMATE	10588019		1000		EHW	C
SODIUM BIFLUORIDE	1333831		100		EHW	B
SODIUM BISULFITE	7631905		5000		DW	D
SODIUM CACODYLATE	124652			1	*	*
SODIUM CHROMATE	7775113		1000		EHW	C
SODIUM CYANIDE	143339	P106	10	10	EHW	A
SODIUM DODECYLBENZENE SULFONATE	25155300		1000		EHW	C
SODIUM FLUORIDE	7681494		1000		EHW	C
SODIUM FLUOROACETATE	62748			10	*	*
SODIUM HYDROSULFIDE	16721805		5000		DW	D
SODIUM HYDROXIDE	1310732		1000		EHW	C
SODIUM HYPOCHLORITE	768152910022		100		EHW	B
SODIUM METHYLATE	124414		1000		EHW	C
SODIUM NITRATE	763200		100		EHW	B
SODIUM PENTACHLOROPHENATE	131522			1	*	*
SODIUM PHOSPHATE, DIBASIC	7558794		5000		DW	D
SODIUM PHOSPHATE, TRIBASIC	7601549		5000		DW	D
SODIUM SELENATE	13410010			1	*	*
SODIUM SELENITE	10102188		100	100	EHW	B
SODIUM TELLURITE	10102202			1	*	*
STRONTIUM CHROMATE	7789062		1000		EHW	C
STRONTIUM SULFIDE	1314961	P107	100		EHW	B
SULFURIC ACID	7664939		1000	1000	EHW	C
TETRACHLOROETHYLENE	127184	U210	1		EHW	X
TETRAHYDROFURAN	109999	U213	1000		DW	C
TOLUENE	108883	U220	1000		EHW	C
TRICHLOROETHYLENE	79016	U228	1000		EHW	C

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